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VOL. XVIII. NO. 24

DEC. 15, 1890.

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DEPARTMENT OF AGRICULTURE

PEACE ON EARTH
★ GOD WITH US ★
GOOD WILL TO ALL MEN

CLEANING
IN
BEE CULTURE

DEVOTED
TO
BEEKEEPING

& HOME INTERESTS.

MEDINA, OHIO
BY
A. B. ROOT

TERMS, ONE DOLLAR PER YEAR.

NICKEL-PLATED "LEADER" SHEARS.



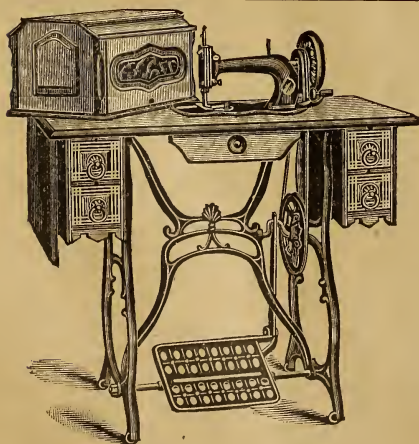
TABLE OF PRICES.		Prices		
Postage.	Name.	One.	10	100
5	7-inch nickel Leader Shears.....	\$ 25	\$2 30	\$22 50
5	8 " " " "	35	3 04	29 00
8	9 " " " "	45	3 80	37 00

The above are all what are known as straight trimmers, as shown in the cut, except the 9 and 10 inch. Part of these are straight, but most of them are bent trimmers; that is, the bottom of the shear, or bottom blade, is on a level with the bottom of handle. Such large shears are generally used for cutting on table, and this shape is preferable. We have also a few dozen 8½-inch barber shears with japanned handles, that will be put in at the same price as 8 in. above. These shears are made near here, and we have been in the factory, and have seen them in process of making. The blades are steel laid, and all is handsomely nickel plated. Now you will want to know how we can sell them so cheap. In welding the steel plate on to the blades there will sometimes be a little flaw that can not be all taken out in polishing. These slight blemishes do not injure the shears a particle for actual service, but still they don't like to put them among the first grade of perfect goods. They are kept by themselves, and sold at a lower price. Of course, these goods are not regular stock, and are not advertised by the makers. Therefore whoever takes the lot as they come can get them very low. Having bought so large a quantity, 150 dozen, we got them at our own price, and it is for that reason that we are able to offer the above bargains. Some of the shears are perfect in every respect, except that they lack a full nickel plate all over, and some are so near perfect that you can not see any thing at all the matter with them, and they are all just as good for service as the very best grade.

BUCKEYE SASH-LOCK.

A DEVICE TO FASTEN WINDOWS UP OR DOWN AT ANY POINT.

For many years I have been trying to get something better to hold a window up than a stick or book, or something of that sort; but although we have tried them, even paying as high as 75 cts. per window, I have never had any thing please me so well as the one here shown. This device holds the sash securely by friction in any desired position, as tight as if it were in a vise. It prevents the sash from rattling, and excludes the dust by making tight joints, and yet it does not mar the wood. It is put on with two screws, and can be fitted by an inexperienced hand in three minutes. It works equally well on upper or lower sash, with or without weights. Printed instructions are furnished with each one, as well as screws to fasten them on with, and yet the price is only 5 cts.: 1 doz. for 50 cts.; 100 for \$4.00. If wanted by mail, add 3 cts. each extra. The above are Japanese.



THE NEW FAMILY SINGER SEWING-MACHINE.

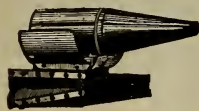
Made from latest models; first class in every respect, and warranted for 5 years. A boon to many an overworked housewife who can not afford to pay the price usually asked by agents. Cut shows No.4. No.1 is the same without the cover, leaf, and two drawers. Price \$11.00. No.2 has a cover, but no leaf or side drawers. Price \$12.50. No.3, as shown in the cut, without the 2 side drawers at the right. Price \$14.00. No.4, shown in the cut, price \$15.00. No.5 has 3 drawers on each side. Price \$16.00. We can furnish a high-arm Singer, in any of these Nos., if preferred, at \$2.50 extra. Wood parts are oil polished, walnut; balance-wheel is nickel plated, and each machine includes a full set of attachments, with instructions for use. We ship them direct to customers from factory in Chicago. We have a catalogue giving cut of each machine and full description which we shall be pleased to mail on application.

A. I. ROOT, Medina, Ohio.

FACTS! FACTS! FACTS!

The Bee-Keepers' Directory, 125 pages, price \$1 00. Thirty Years Among the Bees, 82 pages, price 50 cts. The Am. Apiculturist, one year, price 75 cts. The above paper and books contain all the information necessary to produce honey by tons, and to rear queens by thousands. All mailed for \$1.25. Sample copies of Apiculturist free. Address **HENRY ALLEY, Wenham, Mass.**

BEST ON EARTH



ELEVEN YEARS
WITHOUT A
PARALLEL AND
THE STAND-
ARD IN EVERY
CIVILIZED
COUNTRY.



Bingham & Hetherington
Patent Uncapping-Knife,
Standard Size.

Bingham's Patent Smokers,

Six Sizes and Prices.

Doctor Smoker,	3 1/4 in.,	postpaid	... \$2.00
Conqueror "	3 "	"	... 1.75
Large "	2 1/2 "	"	... 1.50
Extra (wide shield)	2 "	"	... 1.25
Plain (narrow ")	2 "	"	... 1.00
Little Wonder,	1 1/2 "	"65
Uncapping Knife.....			... 1.15

Sent promptly on receipt of price. To sell again, send for dozen and half-dozen rates.

Milledgeville, Ill., March 8, 1890.

SIRS:—Smokers received to-day, and count correctly. Am ready for orders. If others feel as I do your trade will boom. Truly, **F. A. SNELL.**

Vermillion, S. Dak., Feb. 17, 1890.

SIRS:—I consider your smokers the best made for any purpose. I have had 15 years' experience with 300 or 400 swarms of bees, and know whereof I speak. Very truly, **R. A. MORGAN.**

Sarahsville, Ohio, March 12, 1890.

SIRS:—The smoker I have has done good service since 1883. Yours truly, **DANIEL BROTHERS.**

Send for descriptive circular and testimonials to 1tfdb **BINGHAM & HETHERINGTON, Abronia, Mich.**

In responding to this advertisement mention GLEANINGS.

DADANT'S FOUNDATION

Is kept for sale by Messrs. T. G. Newman & Son, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; O. G. Collier, Fairbury, Neb.; G. L. Tinker, New Philadelphia, O.; E. Kretzmer, Red Oak, Ia.; P. L. Viallon, Bayou Goula, La.; Jos. Nysewander, Des Moines, Ia.; C. H. Green, Waukesha, Wis.; G. B. Lewis & Co., Watertown, Wisconsin; J. Mattoon, Atwater, Ohio, Oliver Foster, Mt. Vernon, Iowa; C. Hertel, Freeburg, Illinois; Geo. E. Hilton, Fremont, Mich.; J. M. Clark & Co., 1517 Blake St., Denver, Colo.; Goodell & Woodworth Mfg Co., Rock Falls, Ill.; **E. L. Goold & Co., Brantford, Ont., Can.**; R. H. Schmidt & Co., New London, Wis.; J. Stauffer & Sons, Nappanee, Ind.; Berlin Fruit-Box Co., Berlin Heights, O.; E. R. Newcomb, Pleasant Valley, N. Y.; L. Hansen, Davenport, Ia.; C. Theilmann, Theilmanton, Minn.; G. K. Hubbard, Fort Wayne, Ind.; T. H. Strickler, Solomon City, Kan.; E. C. Eaglesfield, Berlin, Wis.; Walter S. Poudier, Indianapolis, Ind.; E. T. Abbott, St. Joseph, Mo.; I. D. Lewis & Son, Hiawatha, Kan., and numerous other dealers.

LANGSTROTH on the HONEY-BEE,

REVISED.

The Book for Beginners, the Most Complete Text-Book on the Subject in the English Language.

Bee-veils of Imported Material, Smokers, Sections, Etc.

Circular with advice to beginners, samples of foundation, etc., free. Send your address on a postal to **CHAS. DADANT & SON, HAMILTON, HANCOCK CO., ILLINOIS.**

In responding to this advertisement mention GLEANINGS.

MUTH'S HONEY - EXTRACTOR,

SQUARE GLASS HONEY-JARS,
TIN BUCKETS, BEE-HIVES, HONEY-SECTIONS, &c., &c.

PERFECTION COLD-BLAST SMOKERS.

Apply to **CHAS. F. MUTH & SON, Cincinnati, Ohio.**

P. S.—Send 10-cent stamp for "Practical Hints to Bee-keepers." Mention Gleanings. 1tfdb

SECTIONS! SECTIONS! SECTIONS!

On and after Feb. 1, 1890, we will sell our No. 1 V-groove sections, in lots of 500, as follows: Less than 2000, \$3.50 per 1000; 2000 to 5000, \$3.00 per 1000. Write for special prices on larger quantities. No. 2 sections at \$2.00 per 1000. Send for price list on hives, foundation, cases, etc.

16tfdb

J. STAUFFER & SONS,
Successors to B. J. Miller & Co.,
Nappanee, Ind.

FOR SALE.—Pure-bred Poland China pigs at \$3.00 each, delivered at depot here.

Address **CHAS. F. MUTH,**
Morristown, Shelby Co., Ind.

A BIG BARGAIN FOR \$1.00.

SPECIAL CROPS, one year, \$1.00. MONTREAL FAMILY HERALD AND STAR (weekly), \$1.00. GOLDEN CENSOR (Rockford, Ill., weekly), \$1.25.

All of above one full year for \$1.00. Special Crops and either one of the others for 50 cts. This offer is good until Dec. 26. Renewals accepted same as new subs. Address **C. M. GOODSPEED, Skaneateles, N. Y.**

In responding to this advertisement mention GLEANINGS.

THE BEST HOLIDAY GIFT	A MUSICAL INSTRUMENT
SEND FOR CATALOGUE AND PRICE LIST.	MURRAY & HEISS CLEVELAND, O. DEALERS IN MUSICAL GOODS.

In responding to this advertisement mention GLEANINGS.

FOR LIGHT AND DARK FERRETS,

and pure Poland-China Swine, address

N. A. KNAPP,
Rochester, Lorain Co., O.

In responding to this advertisement mention GLEANINGS.

"HANDLING BEES." Price 8 Cts.

A chapter from "The Hive and Honey Bee, Revised," treating of taming and handling bees; just the thing for beginners. Circular with advice to beginners, samples of foundation, etc., free.

CHAS. DADANT & SON,
Hamilton, Hancock Co., Illinois.

In responding to this advertisement mention GLEANINGS.

SECTIONS.

\$2.50 to \$3.50 per M. Bee-Hives and Fixtures cheap.

6tfdb

NOVELTY CO.,
Rock Falls, Illinois.

Please mention this paper

Wants or Exchange Department.

WANTED.—To exchange forest trees, for strawberry-plants, grapevines, and all kinds of small fruit-trees or offers.
W. G. MCLENDON,
Games' Landing, Chicot Co., Ark.

WANTED.—To exchange Italian bees in L. hives for beagle hounds, or will exchange fox-hounds for beagles.
J. B. MITCHELL,
23-24d Hawkinsville, Pulaski Co., Ga.

WANTED.—To exchange apiary of 150 colonies of bees. Will take any kind of farm stock, goods or groceries.
ANTHONY OPP, Helena, Ark.

WANTED.—To correspond with parties who wish to exchange beeswax for supplies.
GEO. RALL, Frenchville, Trem. Co., Wis.

WANTED.—Apicultural offers in exchange for plain and fancy job printing.
23-24d C. W. DAYTON, Clinton, Rock Co., Wis.

WANTED.—To exchange one 6x9 self-inking press, with type, for 10-inch fdn. mill and wax-extractor, or best offers; also a 6-inch fdn.-mill, for wax.
23-24d L. L. ISENHOWER, Reading, Pa.

WANTED.—To correspond with parties having potatoes, onions, apples, and honey for sale. Prompt attention given to correspondence. Consignments solicited. Prompt returns made.
EARLE CLICKENGER, 121 So. 4th St., Columbus, O.

WANTED.—Situation by a young man (20) living in Eastern Pa., who desires to learn apiculture with a first-class apiarist. All references furnished. Wages no consideration. Address
DANIEL S. HAHN,
South Easton, Northampton Co., Pa.

WANTED.—A few pairs of ferrets and 500 lbs. No. 1 extracted honey. Will exchange pure Bronze turkeys.
CHAS. MCCLAVE, New London, O.

WANTED.—To exchange a new foot-power saw for honey. Send for a descriptive circular.
W. S. WRIGHT, Battle Creek, Mich.

WANTED.—To exchange fine Stainer violin, cost \$25, for a good 12-gauge, breech-loading, double-barreled shotgun. Also home-made saw-table, mandrel, and one Simmonds rip-saw—have cut out a large amount of lumber with it—will exchange for bees, honey, or offers.
D. H. TWEEDEY,
Dillonvale, Jeff. Co., O.

WANTED.—To exchange bee-supplies for printing, to the amount of about \$20.00.
24d WM. H. BRIGHT, Mazeppa, Minn.

WANTED.—To exchange a single harness, or light double road harness, sleighs, one a light one, or two-seated buggy wagon, for a small planer, swing saw, and a power press for punching iron.
GEO. E. KNOX, Ballston Spa, N. Y.

WANTED.—To exchange Perfect Hatcher, 176 eggs, cost \$75.00; and brooder, 300 chicks, cost \$38.00; been used at fairs a little, for Italian or hybrid bees.
ELIZABETH DIMICK, Burns, Steuben Co., N. Y.

To the Bee-Keepers of Missouri.

I am requested by the secretary of the Missouri State Board of Agriculture to furnish him for publication a report of the bee-keeping interests of Missouri, and I ask every bee-keeper of Missouri to assist me in this matter by sending me a report of how many colonies of bees they had in the spring of 1890, and how many in the fall, how much comb and how much extracted honey they obtained, and how much wax. I would suggest you also give in the report of all your neighbors or persons that you know of keeping bees. Let me urge every bee-keeper to send in his report and assist in this matter. There are to be 4000 of the agricultural report printed and distributed, and we now have an excellent chance to bring the bee-keeping interests before the people of the State.
J. W. ROUSE.

Sec. Missouri State Bee-Keepers' Ass'n.
Mexico, Mo., Dec. 1, 1890.

NEW SPACERS for L. frames; accurate, 1 $\frac{1}{2}$ ¢, 92 to the pound. Fully practicable for frames in use. Prices: 1 to 5 lbs. at 16¢; 5 to 10 lbs. at 15¢; 10 to 25 lbs. at 14¢. Send stamp for sample. Address G. L. TINKER, New Philadelphia, O. 24-1-24



Undoubtedly the Largest Plant in the West,

Built exclusively for the manufacture of Apian Supplies. One and One-Half Acres Floor Space. We sell as Cheap as the Cheapest, and our goods are as Good as the Best. Parties will do well to write us for estimates on large orders. We will send you our catalogue for your name on a postal card. Address **LEAHY MFG. CO.**

Higginsville, Mo.

In responding to this advertisement mention GLEANINGS.

15 STRONG Colonies of bees (Italian, Cyprian, and Hybrids) for sale very cheap.
REV. R. W. LEWIS, Waxahachie, Ellis Co., Tex.
Offered only 30 days.

GREAT BIG BRAHMAS.

Grandest fowl on earth for the farmer, for market and eggs. Good stock for sale now at farmers' prices. Catalogue free. Address

F. H. PETTS, Warsaw, Mo.

1890 ITALIAN QUEENS FOR BUSINESS.

18tfdb

W. H. LAWS, Lavaca, Ark.

FLORIDA NEWSPAPERS FREE.

We will send you the South Florida Home, six weeks, on trial, for ten cents, and insert your name in our Mailing List (free of charge) which will bring you hundreds of sample copies of Florida Newspapers, Maps, Circulars, etc.; and if you want to visit, or locate in Florida, you can very easily decide where to go, and how to get there, and you will be well pleased with the small investment of ten cents. Stamps taken Address

SOUTH FLA. HOME, St. Petersburg, Fla.

FOR SALE.—Two 32 gal. barrels of basswood honey at 9 cts. per pound, or I will take \$32.00 per bbl., free on board cars. Package free. Barrels will weigh 360 lbs. net; honey is very fine.

H. H. OVERMYER, Lindsey, Sandusky Co., O.

SPECIAL NOTICES.

ADVANCE ON WIRE NETTING.

Remember that only a few days remain before the advance price on wire netting takes effect. All orders received here by the 24th of December will be filled at the old price.

ENAMELED CLOTH ADVANCED.

After the catalogues, which we have sent out, were printed we received notice of an advance in the price of enamel cloth, and you will please note the following correction in price: 25 cts. per yard; \$2.75 per piece of 12 yards. Kindly mark this change in the catalogue you received before it slips your mind.

OUR HONEY QUOTATIONS.

Just after our December 1 number went to press, we received from the West the two cars of honey we had been expecting. One car of very nice white sage honey, in new cans and cases, is from J. F. McIntyre. This is fully equal to the former car from Mercer, and, being in new cans and cases, is more desirable on that account. In the car from Arizona, we have about 4000 lbs. alfalfa comb honey in 1-lb. sections, and about 1000 lbs. in 2-lb. sections.

as well as over 200 cases of two 60-lb. cans of alfalfa extracted honey. This is a good-flavored honey, and light amber color. There is a little second-grade amber color among the comb honey. This looks some worse than it really is, because the cappings are soaked. Some of the extracted is second grade. In order to work this honey off rapidly, and get it out of the way of our other business, we make the following low prices:

White sage, 1 to 3 cans, 60 lbs. each, 11c; 4 to 6 cans, 10.	
" " 3 to 6 cases, 2 cans " 9½; 6 to 10 cases, 9.	
" " 10 cases or more, 8½. cents per lb.	
Light amber alfalfa, 1c per lb. less than white sage	
Amber " " 1½ " " " "	
No. 2 amber " " 2 " " " "	
Choice white comb, 1-lbs., 1 to 3 cases, 20c per lb.	
" " " 3 to 5 " " 19 " "	
" " " 5 to 10 " " 18 " "	
" " " 10 or more " " 17½ " "	
" " " 20 " " 17 " "	
Good " " " 1c less than choice.	
Fair " " " 2c " " "	
Dark " " " 3c " " "	
2-lb. sections, 2c per lb. less than 1-lb. of same grade.	

Most of the comb is in 24-lb. cases, 48-lb. cases count two toward obtaining the quantity price.

2-lb. sections are 64 lbs. to case.

We shall be pleased to mail samples of extracted honey; and when you order, if you will return the sample or give the mark on it we will guarantee to send you honey equal to the sample. We can not send free samples of comb honey; and for the extracted, unless you have a purchase in view, send 5 cents to cover cost of sample. Those who get samples with the view of placing an order, of course will not be charged with them.

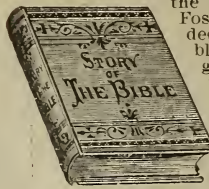
BOOKS FOR CHRISTMAS PRESENTS

We have purchased only one new book this year specially for the holidays. It is.

AN ILLUSTRATED PILGRIM'S PROGRESS. A nice book for a small sum. A few Sundays ago I took a notion to read the Pilgrim's Progress over again. I got it down and tried to see how many of the references to Bible texts I could repeat from the knowledge of the Bible I have gained since I read the Pilgrim's Progress when I was a child. I was very much pleased to find out, with a Bible right at hand, that I could repeat most of them—at least in substance. The book I was using had perhaps half a dozen illustrations in it. I finally said aloud to my wife, "Oh, I do wish that somebody would give us a Pilgrim's Progress full of pictures, from beginning to end!" I want a nice large book that would be full of attraction to every child, and with pictures of such a nature that they would encourage him to do wholesome truth and Bible precepts, even to those who can not read. Well, now, it is a little funny, but that, almost the very next day, the book I had been longing for was put into my hands. It is from the Charles Foster Publishing Co., Philadelphia, where the Story of the Bible comes from. The book is 9½ inches long, 7½ wide, and 1¼ thick. It has 425 pages and 175 illustrations. Ever so many, to whom I have shown it, pronounce it a \$2.00 or a \$2.50 book; but by buying a very large number of them at a time we can sell them to you for only 75 cents. The book is so heavy, however, that it can not be sent by mail for less than 20 cents, making 95 cents by mail, postpaid. The covers are most beautifully embellished in scarlet and gold, and many of the pictures are worth to me alone the price of the book. Among them I would mention Christian and Pliable in the Slough of Despond; Mr. Worldly Wiseman; Giant Despair, etc. But the sweetest and best of them all to me, is Prudence talking to the boys. A single glance at the book by anybody, when you mention the insignificant price for so beautiful a volume, will make him hold up his hands in astonishment. We send a book as a premium for three subscriptions at \$1.00 each; or send us \$1.75 and we will send you GLEANINGS for 1891, and the book, postpaid. If you want something extra nice for a present, we can send you one with gilt edges for 25 cents more.

The following books we have left over from our premium list for last year. They are all, however, in nice order, with the exception of those mentioned otherwise, where a liberal reduction is made in consequence. They are as follows:

THE STORY OF THE BIBLE.



This wonderful book is the production of Rev. Charles Foster, of Philadelphia, lately deceased. It is the whole Bible reproduced in simple language, making a book of 700 pages, illustrated with 274 engravings. It is so plainly and pleasantly written that grown people as well as children, will hardly want to lay it down. In the hard passages in the Bible, difficult to understand, it

makes a commentary that will be thankfully received by some others besides children. Indeed, it has proven so simple, reliable, and helpful, that it has been reprinted in many foreign languages. It is a well made book, printed on fine paper. Regular agent's price is \$1.50. Our price is \$1.00; 15 cents extra if sent by mail, or given free for 2 new names and one renewal, with \$3.00, and 15c extra to pay postage.

STORY OF BIBLE ANIMALS. This is another book, same size and style as Story of the Bible—704 pages, 300 illustrations. It is a description of the habits and uses of every living creature mentioned in the Scriptures, with explanation of passages in the Old and New Testaments in which reference is made to them; by J. G. Wood, author of "Illustrated Natural History." If you are interested in natural history you will be delighted with this work. Children should read it to arouse their interest, and make them more familiar with the Book of books, by becoming more familiar with its animals. Regular agent's price, \$1.50. Our price is \$1.00. By mail, 15 cents extra, or given free for two new subscriptions and your own renewal, with \$3.00, and 15 cents to pay postage.

FABLES AND ALLEGORIES; or, New Lights on Old Paths. This is a most magnificent book by Chas. Foster, the author of the Story of the Bible. It measures 8 by 9½ inches, by 1½ inches thick, and weighs 4 lbs. It is printed on very heavy toned paper, with heavy gilt edges; is bound in light-blue cloth, embossed in black and gold; contains 512 pages and 350 original illustrations. The subject-matter is a series of fables and allegories, each giving a most wholesome moral lesson that very few of us, old or young, do not need. This book would be an ornament on the center-table in any home; and if read and pondered, and its lessons put into practice, many hearts would become more lovely, and many homes more pleasant and beautiful. The lessons taught are made much more pungent by the pictures accompanying, as in many cases the story is more than half told in the pictures. So large and nice-looking a book is rarely sold by agents for less than \$4.00. Our price is \$1.50. By mail, 32 cents extra, or given for 6 subscriptions, with \$6.00, and 32 cents to pay postage, if sent by mail. Will sell two for \$2.80, three for \$4.00; five or more, at \$1.25 each.

BIBLE PICTURES, and What They Teach Us. This is a very handsome book by the same author, Chas. Foster. It contains 315 large illustrations from the Old and New Testaments, with brief descriptions. It contains 232 pages, 8x10, with embossed cloth cover, title in gilt, printed on heavy paper. The book weighs 2½ lbs., and takes 20 cents to mail it. It will make an excellent Christmas or birthday present for a child. It is written chiefly to instruct the children, and should be in every home. Regular agent's price, \$1.50. Our price, \$1.00. By mail, 20 cents extra, or given free for two new names and your own renewal for GLEANINGS, with \$3.00, and 20 cents to pay postage, if sent by mail. We have a few copies of these, also four copies of Story of the Bible, with covers somewhat damaged by water, which we will sell at half price.

FIRST STEPS FOR LITTLE FEET. This is by the same author, and is a collection of simple Bible stories intended more especially for younger learners. Every child should have one of these to read; 328 pages, and 140 illustrations. Very nicely printed, and bound in cloth, title in gilt. Price 50 cents each; 2 for 75 cents. Given free postpaid for 2 subscriptions, with \$2.00.

CONVENTION NOTICES.

The annual meeting of the Ontario Bee-keepers' Association will be held in the city of St. Catharines Jan. 7 and 8, 1891. All interested are invited. W. Colse, Sec., Streetsville, Ont.

HONEY COLUMN.

CITY MARKETS.

CHICAGO.—Honey.—There is not the volume of trade usual at this season; yet prices are without material change since last quoted. Best lots of white honey in one-pound sections bring 17@18; brown and dark grades are not so steady, and sell at 14@16; and where an entire lot of dark honey can be closed out these prices are shaded. The extracted product of this locality, and that of the Western States and Territories, brings 7@8. *Beeswax*, 27.

Dec. 8. R. A. BURNETT,
161 So. Water St., Chicago, Ill.

ALBANY.—Honey.—The honey market is quiet; but stock is light and prices well sustained. We are selling, white, 16@20c; mixed, 14@15c. Buckwheat 13@14c. Extracted, white, 8½@10; amber, 7@8; dark, 6@6½.

Dec. 6. H. R. WRIGHT,
Albany, N. Y.

CINCINNATI.—Honey.—There is a good demand for all kinds of honey. Arrivals are fair of all but comb honey, and Southern extracted. Small lots only of each are arriving and disposed of on arrival. We quote: Choice comb honey nominal at 16@18. Extracted honey, 5½@8 on arrival. *Beeswax*.—There is a good demand at 24@26 on arrival, for good to choice yellow.

Dec. 8. CHAS. F. MUTH & SON,
Cincinnati, Ohio.

KANSAS CITY.—Honey.—Fancy white one-pound comb, 18c; fair to good, 17c; dark, one-pound, 14@15; two-pound comb, white, 15@16c; dark, 13@14. Extracted, white, 7c; dark, 5@6.

Dec. 8. HAMBLIN & BEARSS,
514 Walnut St., Kansas City, Mo.

ST. LOUIS.—Honey.—Demand continues good for comb and extracted. The former is scarce. We quote white-clover comb, 19; dark do., 15@16. Extracted, from 5½@6. *Beeswax*, prime, 25c.

Dec. 8. D. G. TUTT GRO. CO.,
St. Louis, Mo.

BOSTON.—Honey.—Fancy white one-pound combs selling at 19@20c; fair to good, 17@18. No 2-lb. combs in this market. Buckwheat or off-colored honey not wanted at any price. Extracted selling at 7½@8½. No beeswax on hand. Demand good.

Dec. 10. BLAKE & RIPLEY,
Boston, Mass.

DETROIT.—Honey.—Comb honey in one-pound sections in good demand at 15@17c. Extracted, 8@9.

Beeswax, in good demand, at 27@28c. M. H. HUNT,
Dec. 11. Bell Branch, Mich.

ALBANY.—Honey.—The demand has been more brisk the past ten days; especially for extracted; and we have closed out about all we had on hand. We think the stock of comb honey is now nearly all on the market, and do not anticipate any decline in prices. We quote: White comb honey, 17@18; mixed, 15@16; buckwheat, 12@14. Extracted, light, 9@10; dark, 7@8.

Dec. 9. CHAS. McCULLOCH & Co.,
339 Broadway, Albany, N. Y.

NEW YORK.—Honey.—Fancy white, 1-lb. sections, 16@18; fair to good, 1-lb. sections, 14@15; fancy white, 2-lb. sections, 15@16; fair to good, 2-lb. sections, 13@14; fancy buckwheat, 1-lb. sections, 12@13; fancy buckwheat, 2-lb. sections, 12@13; extracted clover and basswood, 9@10; extracted buckwheat, 7@8. The above are about the prices these goods are bringing to-day. Of course, after the holidays, we expect a lull in the honey market as usual, and expect no great demand for it for two or three weeks after New Years. The market is pretty well cleaned up in 1 and 2-lb. sections of fancy clover and 2-lb. sections of buckwheat, as you will see by the prices these goods are bringing. On the whole we think the honey producers have got good prices this season.

Dec. 11. CHAS. ISRAEL & BRO.,
110 Hudson St., N. Y.

FOR SALE.—Comb and extracted honey. Address O. H. HYATT, Shenandoah, Ia.

FOR SALE.—Choice honey in sections, cans, and C. pails. Send for price list to OLIVER FOSTER,
12-ftdb. Mt. Vernon, Ia.

WANTED.—Southern honey. Will pay 5½c cash on arrival for good Southern honey.

22-23-24-1-d CHAS. F. MUTH & SON,
Cincinnati, O.

WANTED.—One or two thousand pounds of nice comb honey. Write, giving amount on hand and price wanted. A. D. ELLINGWOOD, Berlin Falls, N. H.
17fdb

FOR SALE.—£0,000 lbs. of extra fine sage honey in 60-lb. tin cans. Also two carloads of light amber honey, for sale at 6c per lb., f. o. b.

L. E. MERCER & SONS, Ventura, Ventura Co., Cal.
19ftdb

WANTED.—White comb and extracted honey; state price, package, etc. B. WALKER, 17ftdb
Capac, Mich., or Prairie du Chien, Wis.

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H. M. Moyer, Hill Church, Pa., writes Nov. 27, 1890: "That untested queen I rot of you has the finest bees I ever saw—very yellow; all show the fourth band, some even the fifth."

My facilities for pure mating are second to none. Either **Five-Banded** Golden or A. I. Root's "**Honey**" queens. Every queen warranted. I have over 200 orders booked now. Inclose stamp for prices.

JACOB T. TIMPE,
Grand Ledge, Mich.

In responding to this advertisement mention GLEANINGS.

TAKE NOTICE!

BEFORE placing your orders for SUPPLIES, write for prices on One-Piece Basswood Sections, Bee-Hives, Shipping-Crates, Frames, Foundation, Smokers, etc. PAGE, KEITH & SCHMIDT CO.,
21-12db New London, Wis.

For Sale at a Sacrifice.

123 COLONIES of Hybrid and Italian bees, in modified Simplicity hives. Bees in good condition Good range Good market.
22-23-24d R. A. RAPP, Chillicothe, Mo.

DO YOU WANT

To succeed in apiculture? Then try the Nonpareil Bee Hive and Winter Case. Send for catalogue of prices, and inclose 25 cts. in stamps for the new book, "**Bee-Keeping for Profit**," and you will not regret it. Address

21ftd DR. C. L. TINKER,
New Philadelphia, O.
In responding to this advertisement mention GLEANINGS

NEW * FACTORY.

Bee-Hives, Sections, Frames, Etc.

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17-ftdb C. B. LEWIS CO.,
WATERTOWN, WIS.

In responding to this advertisement mention GLEANINGS.



Vol. XVIII.

DEC. 15, 1890.

No. 24.

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QUEENS STINGING WORKERS.

TWO QUEENS IN A HIVE: THE YOUNG ONE SU-
PERSEDED FIRST.

Several years ago I saw a young queen, that had just hatched, grasp hold of a worker in a kind of awkward embrace; and the worker, which had previously appeared all right, was dead when the queen let go. Heretofore I never dared to report this case, being so firm in the belief that a queen never stings any bee except a queen, and never seeing any exception reported, that I thought there might have been some mistake in my observation.

A second case of the same kind having occurred this summer, which my assistant also witnessed, I feel safe in saying that, in rare instances, a young queen may sting a worker.

During the past summer I experimented somewhat largely with queen-cells and virgin queens. I wanted to decrease the chances for swarming by means of young queens, for I believe it is pretty generally conceded that a colony, with a young queen of the current year, is less likely to swarm than one with an older queen. I read in Doolittle's excellent book, that it is dangerous to allow a young queen to hatch in a hive where there was an old queen, as the old queen would be destroyed if the colony did not swarm. I said to myself, "Now I have it. I'll get a young queen into the hive before there is danger of swarming. She'll supersede the old queen, and very likely there will be no swarming that season. Certainly there will be none for a good many days after the young queen takes possession, and, if necessary, I can again supersede her before she is old enough to swarm. I believe I've struck it at last." Then I made a lot of Doolittle's cell-protectors, put a sealed queen-cell in each, and put in each hive to be operated on a cell thus protected. The cell was put between two combs, just under the top-bars, a place being made for it in the combs by pressing with the

ends of my fingers. As soon as it was time for the cells to hatch, or perhaps sooner, I went with no little interest to find what progress was made. I found every cell destroyed by the bees. I had put the cells in horizontally; the protectors were pretty large for the cells, and when the bees pushed against the point of the cell it fell back into the protector, thus letting the bees inside gnaw into the side of the cell. I said, "All right. I've lost my cells, but I've learned something." So I tried another lot, and put them in perpendicularly, point down. Again I examined with eagerness, and found some of the cells intact and some open. Were they torn open by the bees, or had a queen hatched out? I couldn't tell. Finally I came to one which made me call out to my assistant, who was equally interested, "Come quick, Em. See that?" To which she replied, "Sure as any thing. There's the hinged cap. A queen has hatched out of that cell, wherever she is now."

We looked but a short time, and found the young queen. A little to our disappointment, we also found the old queen. "Let's take her away," said Emma, "and then this colony's all right."

"No," said I, "I want to follow this out to the end. Let them both stay. We're sure the two queens are here now, and we'll see whether the old queen will be destroyed and replaced by the young one."

Subsequent examinations revealed the fact that, in some way, the young queen had disappeared. Others turned out the same way. The cells showed that a queen had hatched out, but later examinations failed to denote her continued presence. Out of 55, all failed with but a single exception. In that case the protected cell was given May 28, and 16 days later the young queen was clipped. A number of very young queens were also placed directly on the combs, and met the same fate. Whether I did something different from Doolittle, or whether the poor season had something to do with it, I don't know.

I think that, if the old queen were removed, the protected cell would be respected; but, for that matter, so would a cell without the protector.

"PULLED" QUEENS.

It is pretty generally known, that a very young queen may be put into a hive, and usually allowed to remain unchallenged, if no old queen is there. It may not be so generally known that queens may differ no little in age at time of hatching. A single cell in a queenless hive will hatch out a white soft-looking thing, not able to fly for some time. In a hive having sent forth a prime swarm, at the time of sending forth the second swarm there will usually be found a number of young queens in cells, some of them immature, some of them like the white soft things already mentioned, and some of them ready to fly. The same state of affairs will be found in a strong colony from which the queen has been removed, although it is questioned whether the queens are as good. When one of my colonies with a clipped queen swarms and returns, and the queen is lost or removed, then I find a goodly number of cells, the quality of which will be questioned by no one. For a few years I have made a practice of saving such queens, at least all that I could find use for, if the stock suited me. Please bear in mind, that the white-looking ones are old enough to use, and I suspect that they are much easier to introduce than those that have been imprisoned by the bees in their cells till they are strong enough to fly. I do not wait for any of these young queens to hatch out. I take out a frame with cells, take hold of the end of a cell with the nails of my thumb and finger, and pull off the cell. If the queen is one of the oldest, the cap of the cell will pull off, and, after a little hesitation, the queen will emerge. If the queen is younger, the whole cell will pull off, and a little pulling apart at the larger end of the cell will set the queen free. All the cells are thus taken out of the hive, any queens too young, or with immature wings, thrown away, and the rest put in cages. These are then given to any colony or nucleus needing them, dropping them directly among the bees, with no preparation or caution whatever. These "pulled" queens, as we call them, are, I think, just as good as if each one had hatched out of its own accord; and when such cells are plentiful, a large number can be had in a very short time. Mr. A. I. Root was here one day when we pulled a lot, and seemed quite interested. C. C. MILLER.
Marengo, Ill., Nov. 13.

I, too, friend M., have seen queens, once in a great while, sting a worker-bee; but it usually happened under the influence of excitement or alarm, so that she could hardly have been said to be in a normal state. I have introduced young queens into a hive containing an old queen; but my experience has been about like yours. Yes, I remember about the "pulled" queens; but there were so many things to see when I made you that visit that it is not any wonder that I failed to mention some of them.

WINTER REPOSITORIES, ETC.

DOOLITTLE SUGGESTS SOME THINGS TO AVOID.

On pages 816 and 817 I find a description of a winter repository as given by Harry Lathrop. There is not the least doubt that it will winter bees splendidly; and if Bro. L. can stand the racket of renewing it as often as may be needed,

and take the risk of a "cave in" on the bees while in the repository some winter, should he not renew it when it should be, he is all right as he is. My first repository, or "mud hut," as such repositories were then called, was built on almost exactly the same plan as his; but it lasted only three years so as to be safe.

The trouble seems to be, that, during winter, the wood part of it becomes saturated with the moisture arising from the bees; and as, in the summer months, it does not seem to dry out as it should, just the right condition comes about to cause the wood to decay quickly. Wood that would otherwise last for years will decay in three years so that there is no safety in it, according to my experience, as I have three times had to throw all the dirt out of my bee-cellar by its caving in when I did not expect it. After the first one rotted out I built the side-walls of mason work, on which was made a regular roof of rafters and boards, the same as a roof is made for any building, less the shingles. The dry dirt was now placed on this roof to the depth of three feet, and a cover put over the whole, so that the dirt never got wet at all; yet at the end of three years I could stick the blade of my pocket-knife through any of the boards. I now put in extra sets of rafters so that none of these rafters were more than eight inches apart. This held the earth all right till the rafters gave out, as an eight-inch space was too small for the earth to fall through after it was packed as it was by this time, especially as the old rotted boards helped a little to keep it in place. When the rafters gave out I renewed the roof again; but this latter one did not last as well as the first, so I decided to cover the top with flagging.

As I gave a full description of the cellar a year or two ago in GLEANINGS, together with illustrations, I will not describe it further at this time, more than to say that the repository proper is 24 feet long, 7 feet wide, and 6 feet deep, inside measure. As I could get no flagstone thick enough to hold the weight of dirt if they were laid directly across the wall, I procured them a little over four feet long and set them up the same as rafters would be set up, resting the foot of each on the side-walls, while the tops rested against each other, the same as rafters would. This gave me the height of 8 feet in the center of the cellar, and I am very glad now that I could not get the whole stone thick enough; for had I been able to do so I should have had my hives sopping wet all the while.

No one, who has not had experience, would believe the quantity of moisture which will arise from a lot of bees in a cellar. The bees have been in the cellar but about 20 days; yet these same flagstones, which at that time were as dry as could be, have drops of water coursing down their under surface to the top of the wall, so that it stands in little puddles there. What effect this will have on the bees before spring, I am unable to say; but I fear no trouble as long as this moisture can be kept from the hives, and the temperature kept at from 43° to 45°, the same as it has formerly been.

In using flagging for covering I find that the stone must be at least three inches thick. The stone to cover this cellar cost me \$25.00, delivered. Besides those which were intended for the cover I had some thinner ones to use as battens for the cracks between the stones, as all of the covering stone were not dressed at the sides. After the stone were delivered I found it was necessary to use one of them over the threefold doorway, so I used one of the stone intended for a batten in the main roof, and on top of this I put another one of the battens, thinking that the two, which were somewhat

thick than one of the others, would hold all right. After I had the whole thing completed I found that the upper one of these stones had broken in the middle, but still I thought the under one would hold. This was not to be, however, for at the end of two weeks the other broke: and as four of the other stone were more or less connected with it, they came down also. This caused a third of the whole to cave in, which made a lot of trouble and much extra work, besides some fears that the whole stone might not hold. In a week's time I had it back again as good as ever; and as it has been over two months now since it was completed the last time, I think there will be no further trouble from its caving in. If not, this cellar will be here years after I am dead and gone, and for all time, so far as I can see, unless some one tears it down.

WAX-EXTRACTORS.

Now, friend Ernest Root, if I understand your description of how you make the Doolittle solar wax-extractor aright, and I think I do, when putting the description and the engraving together you have spoiled one of the *most valuable* features of it. If I am right, your glass-frame drops down $\frac{1}{2}$ inch into the rabbets made in the sides of the extractor to receive it. This necessitates the lifting of the frame up bodily in order to remove it, or to do any of the manipulating of wax or scraps in putting in or removing, while all that I do with mine is to lift one end of the sash a little by taking hold of No. 11 and slide it a little to the front or back; slide it back and on again; No. 4 and the extractor making a track for it to slide upon. The glass sash or frame is not removed from my extractor in one manipulation out of twenty. Well, why not remove it? Because it is more work, for one thing; but the main reason is, that in all times of scarcity the bees will collect in swarms about this extractor in less than a minute after the cover is raised so as to let out the perfume of the wax; and every bee which is shut in the extractor is dead in a twinkling. With my sash I can slide it under the hovering bees, and manipulate it quicker also, which will be impossible to do with a sash that must be lifted with every manipulation. After I learned to slide the sash I did not murder one bee where I did hundreds before. G. M. DOOLITTLE.

Borodino, N. Y., Dec. 1.

I suppose, friend D., you still adhere to the plan of having no ventilators in your bee-cellar. When you spoke of the water condensing on the inside of the stones, it occurred to me that the right amount of ventilation would remove all this water. But then we come right on to a difficulty in all such structures. It is this: Whenever we have a warm spell so that the outside air is *warmer* than the air, stones, etc., in your cellar, if your ventilators are open, moisture will be deposited over every thing. A few days ago our new machine-shop was filled with machinery ready to start, before any heat had been put into the building. The weather suddenly changed from freezing to a warm, damp south wind. The tools and walls of the new shop were a good deal colder than this damp air. The consequence was, every time we opened a door or window, great drops of water appeared on all the metal work; and before we could stop it our whole lot of nice machinery was covered with rust. A lot of boys went to work with waste and oil, but it did us

a great deal of damage. Gregory, in his squash-book, speaks of the same thing in his house for keeping squashes, and he directs to shut up the building air-tight (or as near as you can) whenever there is a damp air outside, of a *higher* temperature than the air inside. This necessitates careful watching and prompt opening and closing of ventilators. It seems to me, however, that this is next to impossible with a bee-cellar; therefore I would do as you do—shut the whole thing up as tight as I could and let it alone. And I am not sure but I would do the same thing with potatoes and other vegetables in a cellar. When the cellar is *too warm*, however, I would advise opening the doors and windows long enough for it to cool off to the desired point. But I would do this only during very dry or freezing weather. As soon as it begins to freeze in the open air, the surplus moisture is practically done away with. Now, I suspect one of the troubles with sub-earth ventilation is in this line. Air that comes up through an underground passage will, as a matter of course, be filled with moisture: and it would be just the condition to make every thing rot and decay that it comes in contact with, just as it made your boards and rafters rot and decay. In cold-storage buildings they have an arrangement to take all the moisture out of the air so as to have no dampness on the walls and fruits and vegetables; but it is a somewhat complicated and expensive arrangement. Putting a stove into the bee-cellar, and drying it off, will, of course, fix it; and had we set up some stoves in our machine-shop, and warmed up the walls and the metal work promptly, it would have saved the rusting, and probably paid for the expense of putting up the stoves or something equivalent. I have taken some space to go over this, because it is an important matter; and much damage is often done in the way I have indicated. It is just like the "sweat" on the outside of a pitcher that contains cold water from the well, or ice water. Every little while somebody lifts up his hands in astonishment because the contents of a cellar or certain room are dripping wet; and most people regard it as one of the strange mysteries. The whole thing, however, is very simple, and easy to manage, if we recollect that dew is always deposited copiously when warm damp air strikes any cold body.

In regard to the wax-extractor, Ernest replies as follows:

Yes, friend D., the sides of the new wax-extractor are rabbeted out $\frac{1}{2}$ inch deep. The rim for holding the glass is $1\frac{1}{2}$ inches deep, leaving a projection of $\frac{1}{4}$ inch to get hold of, above the sides or ends of the box. Perhaps I do not quite understand, but I think the cover can be slid back in the same way that you speak of, so as to leave an opening as large or as small as may be desired for putting in bits of wax. We tried to make it just as near like yours as pos-

sible, and yet simplify its manner of construction with reference to machinery.

KODAK VIEWS OFF THE BICYCLE.

AT MR. ELWOOD'S.

In the last issue I said that I had concluded my Notes of Travel. Well, I have not altogether yet. You will remember I took along



ONE OF MR. ELWOOD'S OUT-APIARIES.

my Kodak, and at various places in my notes I promised that I would, *later*, give reproductions of some of the scenes and of some of the things it was my pleasure to see. I took one hundred pictures, and carried the whole apparatus in a small leathern case, 7x3½x4, under my bicycle seat. In fact, the little camera and the case were so small that it might easily be taken for a tool-box, and I was quite willing that that impression should prevail, because I did not wish my valuable collection to be stolen or tampered with. The whole hundred pictures are now mounted, and are good ones, and I assure you it is a pleasure to haul them over and show them to my friends. They form the best kind of a permanent record of my visit at various places. For instance, when I stopped at a place I was not obliged to pull out my note-book and take extensive memoranda of hives and appurtenances. No, I just took out the little Kodak and let it "wink," as it were, at the object of which I wished to retain a permanent impression, and it did its work well, although I am sorry to say that I can not reproduce in half-tone the pictures as nice as they appear in the photographs.

You will remember I took a number of views while at Mr. Elwood's. One in particular was of a hive as he uses it. If you will look back you will see that it was taken under somewhat adverse circumstances. The bees were stinging, and were making things rather lively for Mr. Elwood and myself. The photograph shows that the air was full of the mad little rascals, although the half-tone reproduction does not present them very distinctly. For the present I pass this by, as it will appear along with some forthcoming papers from Mr. Elwood's pen.

I have referred, a number of times, to the hills about Mr. Elwood's apiaries. I present you one view above.

The hills in the rear do not appear to be very

high: but the fact is, they rise one above another. The first range rather hides those behind it in the picture.

Proximity to hills or mountains is doubtless a grand thing for the bees. In a good many cases they form a magnificent protection against the prevailing winds, and then they prolong perceptibly the honey-season. As the basswood opens up, the bees will gather from the valleys. Then as the season advances, instead of its stopping as it does with us in about ten days, the flight of the bees gradually goes upward, upward, upward, until they reach the summit of the topmost hill, when the basswood season ends. Although I have heard this stated many times before, this was an exceedingly interesting point to me, as I looked at the hills covered with basswoods.

Around this particular yard there was a single strand of barbed wire. Said I, "What is this for?"

"To keep calves out," said Mr. Elwood, jokingly.

On a former occasion some of these young ruminants had been meandering around among the hives, and had tipped a few over. Very likely they were suddenly put to flight by some of the hybrids, and took the shortest cut out of the yard: and if a hive happened to be in their way, it did not matter much to them, even if they tipped some of them over. As all his bees were in closed-end frames, no serious result followed: for no calf can make the frames, if they are the closed-end, snuck about.

AT WESLEY DIBBLE'S.

I told you, on page 748, Oct. 15, about Mr. Dibble's automatic swarming-arrangement, and mentioned the fact of my having taken some Kodak views. Well, here is one.



WESLEY DIBBLE'S AUTOMATIC SWARMING-DEVICE READY FOR THE SWARM.

□Mr. Dibble uses hives very similar to our Dovetailed. When a hive is about to send forth a swarm he places a twin hive beside it, about seven or eight inches off. Connecting the two very near the entrance is a tube about 1¼ or 1½ inches in diameter, made of perforated zinc. This tube, or course, is let into holes in the outside of each hive, near the front of the hive, so as to form communication with the two. The entrances are closed with a strip of perforated zinc. When a swarm issues it comes out and fills the air in the regulation way. The queen comes to the perforated zinc at the entrance: and on finding egress denied her perambulates back and forth until she discovers the before-

mentioned hole in the side of the hive. She passes through this; and on vainly trying to get through the perforated tube she enters the other hive. By this time the bees are beginning to return, and, not finding her in the parent hive, a few of the stragglers discover her presence in the next hive, and call their companions to them. The engraving shows the perforated zinc tube connecting the two hives, and I think it will make the matter sufficiently plain.

Mr. Dibble told me that he successfully hived swarms automatically last year and this in out-apiaries, and the invention enabled him to dispense with hired help. So far as he was concerned, he was original in its use, having worked along in a quiet way by himself.

The next engraving shows nicely a Kodak view of his little smoker-house, or shed. It is not large enough for a man to enter, as you see. His son, a young man, stands by its side, so that you can get its relative height. In the lower part is put his smoker wood, if I remember correctly. In the upper part are smokers and other tools for work among the bees. A hinged door closes the thing tight from the weather. It is situated within convenient access from any part of the apiary.

We have had tool-boxes in the shape of Simplicity hives stacked up in our apiary for years. The objection to them was, that honey-knives, wood, and smokers, would be all mixed together in the bottom. With the arrangement above there is a convenient shelf, so that the tools can be separated from the fuel. Mr. Dibble regarded it as a valuable adjunct to an apiary, and I have no doubt that many of our friends can profit by the suggestion by setting one up and trying it.

I told you some time ago how Mr. Doolittle and I together went through his yard examining into his queen-rearing colonies. And you will remember that he showed me quite a number of frames having his artificial cells nicely completed and ready to be removed and put into hives. You will remember, too, that we examined them at random, and I know that Mr.

These half-tone engravings are a faithful reproduction of a photograph, just as nature actually was at the time of taking the picture. You will observe there are 7 complete cells hanging to the top-bar, as it were, in the center of one of Mr. Doolittle's frames. Two others the bees had failed to build out; but by putting in more larvae they would ultimately finish them up.



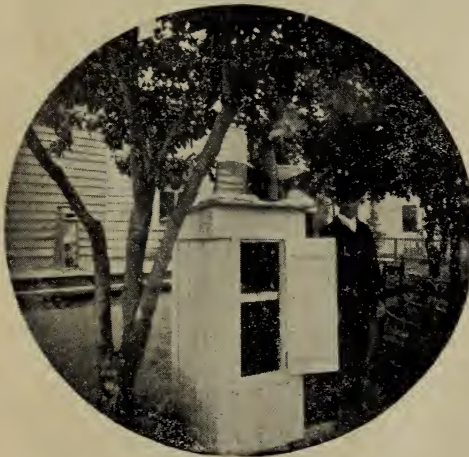
DOOLITTLE'S ARTIFICIAL QUEEN-CELLS
ILLUSTRATED.

No one can deny that Mr. Doolittle's method of queen-rearing is a success in his hands; and if in his, why not in all? The reproduction does not show the cells as distinctly as the photograph, but there they are, just as Nature completed them from the artificial bases.

ERNEST.

INVENTIVE PROGRESS, ESPECIALLY IN THE LINE OF ELECTRICITY.

SOME BRIGHT THOUGHTS AS WELL AS PRACTICAL
SUGGESTIONS FROM FRIEND HEDDON.



DIBBLE'S SMOKER AND TOOL HOUSE.

Doolittle did not pick out his best lot of cells when my Kodak took a shot. The view next presented, I think, is the first one I took. When they were photographed he was hardly aware of what I had done; and yet here it is, preserved as a permanent record of the everyday queen-rearing in Mr. Doolittle's yard.

Friend Root:—I was not a little interested in your recent editorial regarding the rapid strides in electrical invention. As I have been for some time, and am at present, making electricity a study, I thought of a few words I should like to say to you and your readers regarding just such schemes as friends Dadant speak to you about, regarding utilizing the immense water-power of the Mississippi River, Niagara Falls, and other places. I want to say to you, that the cost of electrical apparatus, and wire for conveying the current long distances, is such that water-power of ever so great capacity is of no value whatever, unless it be located very close to the spot where the power is utilized. Very large insulated copper wires are enormously expensive; and unless such are used, even with the highest-tension systems, the loss, or "drop," as it is called, in electrical parlance, becomes so great that the utilizing of water-power at long range is impractical. Many of the best electricians of the country with whom I have come in contact, tell me that all of the electrical inventions of the present time are merely mechanical improvements here and there, and that no great innovation may be looked for, in any direction which they can

conceive, except it be the converting of heat from the combustion of fuel directly into electricity without having to go around through steam with engines and dynamos. If this can be done, and they say the signs of the times are favorable, then we shall have the splendid arc and incandescent lights at a price even lower than the cost of gas or kerosene.

Four of us procured a franchise, and installed in this city an incandescent plant, about a year ago; and after nearly a year's experience we have not yet discovered any mistake in our choice of system and apparatus. Of course, we visited numerous plants before selecting. Of the seven bids from seven different companies, we accepted the highest-priced of all, a price nearly double the lowest, and feel that we did just right, as the dearest proved to be the cheapest in the end. We light our streets with 32-candle-power incandescent lights; and for the resident part of any village or small city like our own, ornamented with well-developed shade-trees, the incandescent light beats the arc light more than two to one. Of course, the arc light is larger and brighter, but the incandescent is so much cheaper that we can afford nearly ten times as many of them at the same cost. We can place them low enough so that there is no sidewalk in the city on which you could not see your jack-knife lying, or tell what time it was by your watch, in any spot or place on our streets, the "darkest night that ever blew."

Our citizens laughed at us when we put in the incandescent lights, but now they are all more than satisfied, and can see the wisdom of the choice of our city council. All of our best business houses are lighted with the incandescent lights, compared with which the best kerosene lamp looks like a phosphorescent beetle, or "a convalescent white bean," as Bill Nye would say. We use the high-tension alternating-current system, with the Westinghouse apparatus (the best in the world); and just here it may surprise many of your readers when I tell you that there is no doubt in my mind but that George Westinghouse is a much greater inventor than Thomas A. Edison, not only in all the realm of mechanical inventions, but even those connected with electricity. But this article is long enough. JAMES HEDDON.

Dowagiac, Mich., Dec. 2.

Friend H., we are very greatly obliged to you for the information you give us. From what we know of you, we are not at all surprised to know that you, too, have been attracted by this matter of converting mechanical power into light. Very likely you are correct in regard to transmitting the electric current long distances. We are beginning to see something of it in carrying our wires for electric lighting to different parts of our plant. I, too, have been watching for some great developments in the way of a shorter cut from heat to an electric current.

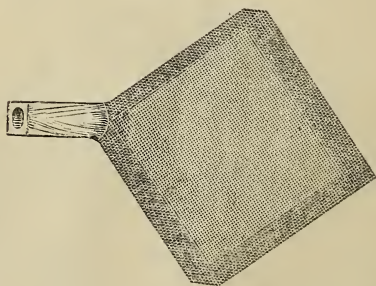
SHIPPING AND INTRODUCING CAGES.

HOW TO MAKE AN EXCELLENT INTRODUCING-CAGE.

Friend Root:—I have just been sizing up your new Benton shipping-cage, and it meets my hearty approval in every way. With good fresh candy, or, rather, with fresh Good candy, and 20 or 30 bees, it should deliver 95 per cent of all the queens sent to California, in good condition.

The introducing feature does not hurt it a particle for shipping, and the party receiving it can use that part or not, as he thinks best. I usually prefer to use some other plan with queens coming from the East, for several reasons. As a rule, the longer a queen has been caged without access to comb, the longer it will be before she commences to lay after being liberated. A queen coming from the East, usually takes from two to three days to get in condition and commence to lay. Before this time she is almost as hard to introduce to a full colony as a virgin, therefore I always introduce her to a few young bees until she commences to lay, and then introduce her to the full colony.

Another reason why I do not use the shipping-cage for introducing is because the bees often have so much of the candy eaten out that the queen would be liberated in a few hours; in which case if the reigning queen had just been removed, the new queen would surely be killed. Those objections do not apply to queens shipped a short distance, because the queen would be ready to lay almost as soon as liberated, and the bees would have very little of the candy eaten out. I believe a colony of bees are in the best condition to have a strange queen liberated among them when they have been queenless long enough to have a capped queen-cell from three to five days; they seem to think the queen has come out of one of the capped cells, and it is all right. Of course, the queen should be caged in the hive one or two days before the bees liberate her, to get the scent of the hive. She should be caged on the comb while the bees are eating their way in, so when they break into the cage they will find her in a normal condition, depositing eggs. The cage I use for this purpose is a simple affair. I take a piece of wire cloth $5\frac{1}{2}$ inches square, cut little pieces $\frac{3}{4}$ of an inch square out of each corner, and bend the four sides at right angles, making a box 4 inches square and $\frac{3}{4}$ inch deep. Into one corner of this box I fasten a tube of wood or tin $\frac{1}{2}$ inch in diameter, and two inches long, which is filled with Good candy, for the bees to eat out and liberate the queen.



MCINTYRE'S INTRODUCING-CAGE.

I use this cage altogether in my apiary, for changing laying queens from one hive to another. I kill my old queens when they are two years old, and introduce young laying queens in their place. My practice is to go to the nucleus with the young laying queen; lift out the comb with the queen on, and press one of these cages into the comb over the queen, and what bees may be around her. Carry this comb to the hive with the old queen; find and kill the old queen, and place the comb with the young queen caged on it in the center of the hive, taking one comb from the hive back to the nucleus. In a week I go and take the cage out and find the young queen laying. When I receive a valuable queen from a distance I liberate her at once on a comb of hatching brood, with

some young bees; and when she commences to lay I introduce her as above. J. F. MCINTYRE.
Fillmore, Cal., Oct. 21.

The success of the Benton cage for sending queens across the continent to California has been phenomenal; but within the last few days it has failed to deliver the queen alive. The cages, at our request, were returned, and on inspection we found that the candy had become as hard as a rock; and the poor bees and queen, not being able to use it as food, simply starved to death. The fault, then, after all, was not in the cage, but in the *candy*. We next tried the Manum bee-candy, and that for some other reason did not answer. The cold weather coming on, I rather suspect has had something to do with it; for, during the warmer months of the year, the Good candy has worked. We now rather look to the Morrison candy. The latter, Mr. S. W. Morrison says, works perfectly during all weathers, and is always soft.

We have had large experience in introducing—yes, introducing hundreds every year in our apiaries, and we don't want a colony queenless more than one or two days, at most, for safe introducing. We have the best success with a colony that has hardly had a *chance to make* preparations for a new mother. The point is this: That when those preparations are once begun (cell-starting) they sometimes seem *determined* to carry out their original intentions; and so we prefer to *get the start* of the bees by giving them a new queen before they have time to realize their queenless condition. If *we* wait until cells are capped, the bees are more apt to kill the queen when released. Some good authority, I don't recollect who, now, corroborates this. Still further, when we take out one queen we frequently cage another at the same time. In fact, we generally do so, and never have a failure except when there is a dearth of honey, and the whole apiary is disposed to rob.

Now about your cage. The principle is certainly good. It combines the good principles of the old Peet with the later and more convenient candy method. For introducing alone, I believe it is the best.

It is a big thing to give a queen access to comb just as soon as she reaches her destination, especially for you Californians. E. R.

BEES ON THE ISLAND OF MALTA.

AN INTERESTING LETTER FROM THE ISLAND,
FROM ONE OF OUR OLD CORRESPONDENTS
IN QUARANTINE.

Dear Mr. Editor:—After a trip of five days by sea we arrived, coming from Jaffa, at the island of Malta. I changed steamers at Port Said at the Mediterranean entrance of the Suez Canal. When we were in sight of Malta, the captain said: "A queer place, this Malta. They have strange notions as to quarantine." And, indeed, it turned out very queer, having no common sense about it. The three cities lie around

a number of creeks where a number of men-of-war are stationed. It affords place for many other vessels. Steamships are continually running into the harbor, which is a great coaling station. Our steamship ran into French Creek, conducted by a Maltese pilot. The sanitary officers came on board, and, after examining my papers, marched me (or, rather, rowed me) off into the quarantine, together with the pilot, as having touched the steamer on which I came, the cholera being 300 or 400 miles north of Jaffa. The steamship itself, the passengers, and crew, had a fair bill, and were allowed to land, together with the sanitary officers. I had to sit alone in a room for the next eight days. I was properly fumigated, and robbed of as much money as possible, with the least possible comfort—enough to make a person, traveling for the restoration of his health, to become eventually sick, under the protection of the Great Britons.

THE HONEY, AND HOW THE ISLAND OBTAINED ITS OLD NAME.

Being in the hospital, or lazaretto, a bee, black as jet, fell down before me. I saw that the bees of the island are, if not identical, at least very much like the Tunisians. Melita of the ancients was, very likely, named so by Greek settlers, who changed the name of Ogygia into Melita, now corrupted by the moderns into Malta. *Melita*, very likely, means "the honey-producing," although the constant advance of agriculture has brought apiculture to a low scale. The island is about 60 miles in circumference—12 wide by 20 long. The climate is very favorable in every respect.

At the western end of the island, about Calypso's Grotto, the best honey is produced from the wild thyme, growing more abundantly there than on the rest of the island, whither the bee-keepers all take their hives in summer. Owing to the rocky and treeless East, this part may have been still more beautiful in ages past, for Homer calls it

A scene where, if a god should cast his sight,
A god might gaze, and wonder with delight.

But it does not even make a human being wonder with delight now. The poet made Calypso live there. There is a spring, and it might have been nicely fitted out at one time, but none of those groves are to be found there excepting carob-trees, which stand about almost on the bare rock, and supply a very dark-colored honey in spring. Wandering down the hill

Where bloomy meads with vivid green were crowned,
And glowing violets threw odors round,

as the same poet says, may, as much as the before-mentioned, have met the eye of the traveler after a weary voyage on a slow-sailing vessel, and coming, perhaps, from the barren shores of Tripoli, landing in the Bay of Melleha, which again derives its name from honey, his fancy made it fit for gods to dwell in. Near by is a dry river-bed, all in rock, covered here and there with carob-trees, called by the natives "Oned-el-asel," a pure Arabic name, denoting the quantity of honey there produced. It is translated "Valley of Honey." A priest told me that, more than 70 years ago, many bees lived there wild, and probably the masses of honey they got there made them give such names. The natives bring the hives here and have them shut up in caves, before which walls are built, with small holes for each colony to go in and out. An iron gate closes the very low entrance. They greatly fear being robbed by such as have a good taste for sweets, and, more, "covet their neighbors' property." The owner of the place gets 5 to 8 sence a hive for his hire during four months.

THE POOR SEASONS IN MALTA.

There are no statistics to give as to how many hives there may be on the whole island. A canon told me there might be about 1000, which in good years may yield an average of 10 lbs. a hive. The season of 1890 seems to have been a failure. The canon, who possesses some 60 hives, which are in his garden on a cape, has had 4 lbs. of honey from the whole lot. He has spent a good deal of money in transferring his hives into Italian-made hives, and has lost a good many swarms, from moths, dwindling, fertile workers, etc., and is now fast transferring them into the Sandringham hives. He reads Italian bee-papers, and takes every thing for granted that these papers say, and follows the same innovations. He has any amount of queen-excluding zinc, sections, feeders, and so forth; has also brought numbers of queens from Italy, a few Cyprians, but he does not believe in one race stinging more or less than another. Another gentleman very satirically remarked to me, "This part of the island, where not less than 200 hives of bees are kept within a radius of a few miles, and no flowers worth talking about, is just good enough for spending one's money in feeding and breeding bees for the pleasure of seeing them flying and working." He, too, had about a dozen colonies in Sandringham hives, and is feeding the bees to give them a fair living. A third gentleman, too, an amateur, who only looks at the busy creatures, took some honey a year ago, but ultimately had to feed back "over and above" what he had previously taken, so now he has concluded to let 'em alone; and, besides, it was very cruel to take away the honey they had so carefully gathered. The above named are foreigners.

THE MALTESE BEE-KEEPER.

The Maltese bee-keeper is quite a different chap. As superstitious as his Oriental relations, he is as far back in bee-keeping as any one else. The hive is made of earthenware, cylindrical, and costs about 8 pence. Its length is nearly 15 inches, and diameter about 10. When this is full he puts another cylinder, about 12 inches long, at the back. As a rule he takes only the honey which is stored in this prolongation, after having blown some smoke on the bees (the smoker is only bovine which he blows into the hive, as they have no smoking-implement). The more timid bee-keeper wears a veil and gloves, while the expert does not. They transport the bees on a ear, with plenty of straw to prevent jarring too much. The honey-comb is broken up in small pieces, and put into a receptacle in a room sheltered from bees and sun. A hole at the bottom allows the honey to flow out. This is received in another receptacle, of earthenware, and in this stored away to find its way into the market. The Maltese honey is sold at 6 or 7 pence a pound, while the Sicilian honey, which is worked into confectionery, brings only half the price.

The swarming season is about the month of April; and, according to their notion, "the drones, which they suppose to be hatched out of the queen-cells, compel the swarm to leave the mother hive, and are then either dissipated by the wind or otherwise killed by the bees. Should the bees not kill the drones (which they confound with queens), the swarm is liable to fly off again. The leaders they call 'flowers' (drone-queens) are not the mothers. As soon as the swarm is settled they start building comb, and filling the cells with honey and water. Out of this mixture the young bees issue; but the water must be as clear as crystal, otherwise no bees will hatch out." The bees seem to be great swarmers, for they have from three to five swarms per hive, in good seasons. When any

honey is wanting, they feed the bees by putting shallow earthenware plates, filled with honey and syrup, in the back part of the hive.

The hornets are also among the enemies, although it is twenty years since they have been strong enough to destroy any hives. They destroy the hornets by simply burning the nests where they find them. The early rains of this season have destroyed them altogether. Moths are a great nuisance too; but as the natives keep only a few hives, which are closed by only a flat stone at the back, they can at any time look in, without disturbing the bees. Those I saw were very quiet. We did not meddle with them any more than to look at them and take a few bees out of the foremost. The natives are very much afraid, too, of the "evil eye." Some persons are not allowed to look into the interior at all, as the effect of their looking at them would very soon destroy the hive. The death-head moth, too, takes honey, but is killed by the bees as soon as it contrives to enter the hive.

A barren rock, as many call Malta, it is still wonderful how many vegetables are raised, and, indeed, good ones too. They are very laborious, those Maltese which have to depend entirely on commerce. It being a well-situated island in the Mediterranean, between Sicily and Africa, it has a very splendid harbor, or, rather, a number of harbors, into which a number of steamers are continually going and coming, principally as a coaling station, besides the many men-of-war which are either stationed here or call here on their Mediterranean tour.

AN OLD TRADITION CONCERNING PAUL AND THE VIPER.

The Maltese are very religious and superstitious. All the country is covered with churches dedicated to as many saints. They always uncover their heads when passing by a church or shrine. The church of St. John, where all the Grand Masters and Knights of the Templars are buried, is one of the finest and richest churches I have ever seen. St. Paul has many churches, chapels, grottoes, and bays here, in commemoration of the great apostle's shipwreck on the island. There is a curious tradition among the islanders respecting the viper that bit the apostle. They say, "When Paul the apostle was bitten by the viper, and shook it off into the fire without being molested, the inhabitants at once embraced Christianity on that account, and the venomous serpents were changed into harmless ones to this date." It is a fact now, that there are no venomous serpents here in Malta; but I believe there never have been any, as the island of Sicily is void of them. They are two blessed islands as regards this; for when we think how many persons are killed in India yearly by serpents, this may be called a very happy place; nevertheless, I am happy to leave it to-day and bid Malta adieu, feeling a little bit with Lord Byron, who tasted the disagreements of Malta, and very especially, it seems, its quarantine, as he says in his "Farewell to Malta." P. J. BALDENSPERGER.

Valletta, Malta, Nov. 5, 1890.

OUT-APIARIES.

OVERSTOCKING AN APIARY: HOW MANY BEES CAN WE KEEP IN ONE LOCATION WITH PROFIT? SOME VALUABLE SUGGESTIONS FROM E. FRANCE.

This subject has been worked over time and again; still, what do we know about it? I am aware that there is a considerable number who are thinking of starting an out-apiary the coming spring, as their home apiary is becoming

overstocked, or, at least, they think so. Now, so much depends on the amount of honey-producing plants on a given location, it is hard for one to lay down any set rules as to how many bees we can keep, or how far apart we must locate our apiaries to obtain the best results. In good seasons we may be able to get good returns from a crowded pasture. But seasons like the last tell very plainly when we are overstocked—that is, for a poor season.

□ I have taken pains to make a correct diagram of the territory that we occupy with our bees; and I must say that I was surprised myself when I saw the exact position of each yard. They are clustered together more than I had supposed. The accompanying diagram will show how they stand, and I will give some facts and figures that will make quite an interesting study about setting out out-apiaries and overstocking our pasture. Of course, it is impossible to locate a set of out-apiaries just so far from the home apiary, in a circle, each one in its proper place, just as nicely as we could make it on paper. We have to take such places as we can get, and many of the places that we can get won't do at all, for some reason or other; and when you have six or eight yards planted you will be likely to find, as in our case, some of them badly crowded—too much so for profit.

Atkinson yard.	Colonies, spring count.	100
Cravin	" " "	90
Kliebenstein yard	" " "	96
Waters	" " "	88
Jones	" " "	80
Gunlauch	" " "	90
Home	" " "	105

No increase to speak of. 649

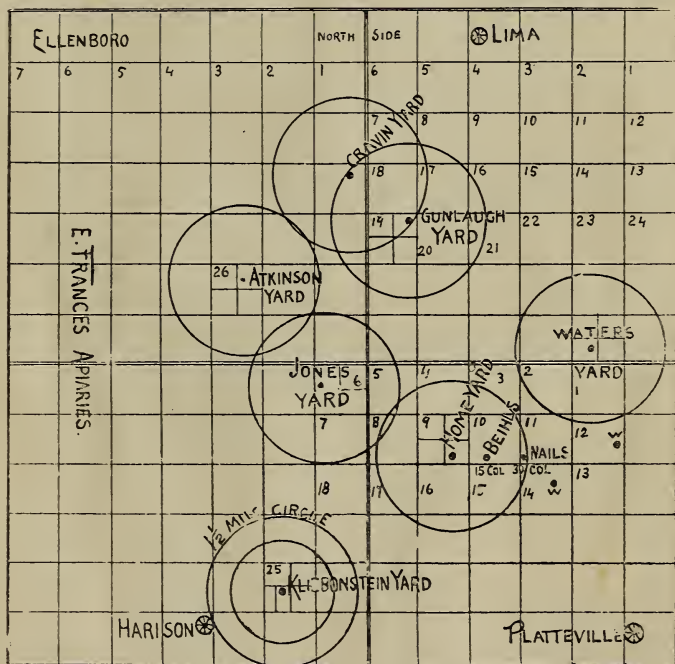
Honey extracted:	
Atkinson yard	190
Cravin	200
Kliebenstein	740
Waters	497
Jones	600
Gunlauch	358
Home	540

Total 3125

Fed back:	
Atkinson yard	000
Cravin	336
Kliebenstein	000
Waters	000
Jones	210
Gunlauch	486
Home	900

1932 1193

Surplus after feeding.



FRANCE'S OUT-APIARIES.

The circles in the diagram are three miles each, or $1\frac{1}{2}$ miles from center to the outside, which is a very short distance for a bee to go in search of honey. If the bees fly three or four miles, as I think they do in poor seasons, it is plain to see how it works in a poor season. The outside apiaries may be getting a fair living, while the inside yards are nearly starving. In first-class seasons, when honey is plentiful everywhere, and very few bees go over one mile, there is enough for all. I here give the number of bees in each yard this spring, the amount of honey taken, and the amount of feeding this fall to put the bees in trim for winter.

Now, notice the Kliebenstein yard, how it is located, away by itself, as for distance, from other yards. It has a great advantage; and then there is plenty of basswood all around it. It has no bees belonging to other parties on its territory. It gave the most honey, no feeding, and is in the best condition of any yard for winter stores.

We will now notice the Atkinson yard. It is pretty well hemmed in on the north and east sides by the other yards, but it has an unlimited field on the west, of good pasture. We took but little honey there, but it is in good condition for winter, without feeding.

Now, away over on the east side we have the Waters yard. It is two miles from basswood, but a splendid white-clover range—plenty of basswood two miles north and east. This yard gave some honey, and required no feeding for winter.

Then there are the Cravin and the Gunlauch yards, each 90 colonies in spring, only $1\frac{1}{2}$ miles apart—too close, with very little basswood north of them. Both of these yards were fed more honey than we took from them. There were a few acres of buckwheat near them that helped them some. The Jones yard did fairly well, considering its surroundings. It had the least number of bees, an abundance of basswood near, and then had eleven acres of buckwheat just over the fence.

We will now notice the home yard. There were 105 colonies. The Jones yard is rather too close. Then there is an apiary of 20 colonies a little over half a mile east, at a point marked Beihls; another apiary $1\frac{1}{2}$ miles east, 30 colonies, marked Nails; another apiary southeast, marked W, about 40 colonies. Another apiary still further to the east, and a little to the north, marked W, about 40 colonies. So you see the home-yard territory is overstocked the worst of all, and had to be fed 360 lbs. more than was taken from them. The home yard has the best clover field of any, but basswood is scarce within two miles. In looking at the diagram, one not acquainted with the ground would likely ask, "Why don't you use that open space southeast of the home yard?" It is all prairie land. Corn and oats don't yield much honey.

We will now just look back to the record of a year of plenty, 1886, and see how the yards averaged up then.

COLONIES, SPRING OF 1886.

Atkinson yard, 72 cols.; average lbs. per col., 106	
Cravin " 80 " " " " " 106 $\frac{1}{4}$	
Kliebenstein " 60 " " " " " 109	
Waters " 72 " " " " " 107	
Gunlauch " 50 " " " " " 100 $\frac{1}{2}$	
Home " 61 " " " " " 117	

Jones yard not planted then.

FOR 1885.

Atkinson yard, 56 cols.; average lbs. per col., 90	
Cravin " 53 " " " " " 74	
Kliebenstein " 46 " " " " " 62	
Waters " 57 " " " " " 57	
Gunlauch " 46 " " " " " 77 $\frac{1}{2}$	
Home " 62 " " " " " 71 $\frac{1}{2}$	

FOR 1884.

Atkinson yard, 51 cols.; average lbs. per col., 107	
Cravin " 41 " " " " " 113	
Kliebenstein " 51 " " " " " 109	
Waters " 41 " " " " " 130	
Gunlauch " 41 " " " " " 106 $\frac{1}{2}$	
Home " 61 " " " " " 113 $\frac{1}{2}$	

FOR 1883.

Four yards, average for the whole, 105 lbs.
Number of colonies, 35, 48, 33, 60.

In 1887 we kept no record. It was a very poor season, and we got but little honey.

The year 1884 was a very poor year also.

	Cols. in spring.	Average per col.
Atkinson yard, 76.....	23	
Cravin " 67.....	20	
Kliebenstein " 67.....	31	
Waters " 69.....	32	
Gunlauch " 77.....	21 $\frac{1}{2}$	
Home " 66.....	37 $\frac{1}{2}$	

FOR 1889.

	Cols. in spring.	Average per col.
Atkinson yard, 72.....	40	
Waters " 79.....	40	
Kliebenstein " 87.....	63	

Gunlauch yard 79.....	47
Cravin " 78.....	49
Whig " 52.....	40
Home " 84.....	52

Now, friends, you have the figures and the map of the ground that our bees are on. Study it for yourselves. But if you plant out-aparies, don't put them less than five miles apart if you can help it. If you are going to keep help at the separate yards, to run the bees, six miles apart is near enough; then, if the pasture is good, you can keep from 100 to 150 colonies in each place. If you go from home with your help every day, then you want to guage the number of colonies so as to work one whole yard in one day; or if you have but three or four apiaries in all, you will have time to work two days in each. But don't go over the roads for less than a full day's work when you get there; and remember, when you are locating an apiary, that, when you are hitched up and on the road, one or two miles further travel will pay you better than to crowd your pasture. Don't overstock your ground. E. FRANCE.
Platteville, Wis., Nov., 1889.

Friend F., you have given us an exceedingly valuable communication from experience, and your diagram is a study. Your tables are astonishing, and yet it is not more than we should expect; and the effect of overlapping apiaries, in the amount of honey secured, and the amount of feeding required, is very marked. In a poor season, then, it is better to have the colonies further apart. When there is a good flow of nectar, it does not matter if they are nearer together. The suggestions in your concluding paragraph are excellent, and will bear reading several times. Yes, when you are hitched up and on the road, one or two miles further travel pays a great deal better than to crowd pasture. It would pay us all to study our territory carefully, as you have done; and I hope some of our other out-apiary bee-keepers will take the pains to make a diagram and see what they learn from it.

FUNGUS GROWTHS IN INSECTS.

PROF. COOK CORRECTS A SENSATIONAL MISSTATEMENT.

Friend Root:—You ask me to comment upon the illustrated article headed "Wooden Caterpillar," to be found in the *Scientific American*, Sept. 27, 1890, page 201. I gladly do so, as it gives a good chance to illustrate how love of the sensational leads to false conclusions and erroneous statements.

The article, in brief, is this: An insect, the oweto, of New Zealand, commences a caterpillar, and ends a vegetable. To quote, "This is a vegetable caterpillar—called by naturalists, *Hipitalis virescens*. It is a perfect caterpillar, and when full grown measures three and one-half inches long." To quote again: "Until it is full grown, it conducts itself very much like any other insect; but when fully grown it undergoes a wonderful change. For some inexplicable (sic) reason the spore of a fungus fixes itself directly on its neck, takes root, and grows like a diminutive bullrush, from six to ten inches high, without leaves, and with a dark-brown head."

The caterpillar had previously entered the earth. Many caterpillars—all of the families of

noctuidæ and *geometridæ*—do this to pupate. The fungus grows up to the surface of the earth, and a little above. The root grows into the caterpillar, which it exactly fills in every part, and, without altering its form in any respect, substitutes vegetable for animal tissue. Then both die, and become very hard, but with no change of form. "The thing is then a wooden caterpillar."

"Where the oweto is found, specimens are easily obtained. It is light green when alive, and the Maoris eat it in its soft state. When dry they powder it for use in tattooing." So far this account is not really untrue, but is misleading. One would infer that the animal really transformed into a vegetable. In reality it transforms only as a vegetable transforms into a man when we eat cabbage. The fungus grows from the caterpillar, and obtains its nourishment by taking the substance of the insect. But what is left is no more the insect than the stone of the fossil-fish is the fish itself. But the close of the article is wholly untrue. It is stated that the caterpillar and fungus were made for each other. Yes, just as the lion and the deer which it kills and eats were made for each other. I imagine that the deer tribe would object to the statement, just as I ween the caterpillar that becomes a victim to the fungus would do, could it speak: just as we would object to the remark that we and microbes are made for each other, because microbes kill some people through consumption.

Again, the article states that the caterpillar never exists without the fungus (?), or the fungus without the caterpillar. This is not only untrue, but utterly absurd. If every caterpillar is killed by the fungus, what keeps up the species? The very fact of the existence of the caterpillars shows that some are not attacked and killed by the fungus, but develop into moths which lay eggs and produce more caterpillars. Suppose cholera were always fatal: how absurd it would be to say that people were made for the cholera microbe, and never existed without it! I am not sure that the reverse, in case of this New Zealand fungus and insect, is not true, but I presume it is not. It may be that this special fungus must have for its life and growth this special caterpillar, and will grow in no other soil, if we may so speak; but I doubt whether such is the case. While possibly it can grow only in this species, more likely it will develop from others as well. I send a copy of the figure from the *Scientific American*, that the readers may see how the fungus and victimized caterpillar appear.

The explanation of this is easy. The fungus develops, at the brown enlargement, many spores, which take the place of the seeds in these lower vegetables, like puff-balls—the fumes of which are these spores, and like the mushrooms or toadstools. These spores, when they lodge in suitable soil, and are watered by the right conditions, grow. Our toadstools like a damp rich soil. This fungus takes to the tissues of a caterpillar. In its growth it appropriates the substance of the insect, which, as a consequence, dies, so



THE WOODEN CATERPILLAR LAR.

the fungus is a terrible insecticide. Were all the caterpillars attacked, as the article states, all would die and there would be no more food for the fungi. In case they grew on this insect only, as stated in the article, they too would all likewise perish.

We have a case exactly like this, not uncommon here. The common and very destructive white grub, *Lachnosterna fusca*, larva, of the common May or June beetles—often called June bug—is frequently attacked—see figure—by a fungus. This fungus is fatal to the grub, and we may well wish it to become more common, as we should like to see all its hosts—the grubs—destroyed. But, like all vegetation, these fungi must have suitable conditions in which to thrive, and so they often fail either to find the grubs or else to develop when the spore is once planted.

A. J. COOK.
Agricultural College, Mich., Oct. 15, 1890.

I am very glad indeed to have such able authority as friend Cook come forward and tell us that a statement like the above is not only an untruth, but an absurdity. The world is full of people who are ready to grasp and take in as truth such misleading statements, especially when they come through such a journal as the *Scientific American*. When the thing first came under my eye, I pronounced it at once as absurd as the popular newspaper yarn of a year or two ago, that hens' eggs were being manufactured, so real as to defy detection; and when somebody else a little later said that "these eggs would hatch chickens, but the chickens did not have any feathers on," a few were ready to swallow this down as a real achievement of the present age. Perhaps these latter were younger people who did not give the matter very much thought. We hope the *Scientific American* will be fair enough to its readers to correct the untruth which they have perhaps inadvertently let pass in their journal. The *Scientific American* deserves more credit, perhaps, than any other paper published, for promptly putting down any blunders in mechanics or machinery—the Keeley motor, for instance. But it requires an editor of more than human wisdom and energy to detect like frauds in kindred industries. Perhaps this is why foolish statements in regard to manufactured honey have obtained space in so many journals that are sound and accurate in their own line of work.

LOCAL CONVENTIONS.

A MODEL ASSOCIATION IN E. FRANCE'S NEIGHBORHOOD.

The Southwestern Wisconsin Bee-keepers' convention was held in the apiary rooms of Mr. E. France, Platteville, Wis., Oct. 8, 1890. A large number was added to the membership, including some from Dubuque Co., Iowa, and Darlington, Wis. On account of so many papers read before the convention, and the dis-



SOUTHWESTERN WISCONSIN BEE-KEEPERS' ASSOCIATION. HELD AT PLATTVILLE, OCT. 8, 1890.

cussions that followed, for want of time questions had to be somewhat limited.

The association has now become large enough, and interesting enough so that the probability is it will soon require two days for its conventions instead of one, as heretofore. Had there not been an evening session some of the papers, discussions, and questions would have had to be laid over. A gathering of the assemblage was soon arranged, when the artist took two shots, and I am happy to present you a good view of the convention.

The cordial entertainment and hospitality extended by Mr. France and family is simply a matter far beyond any expectations; and it is probably a question whether any class of people but bee-keepers could excel in such a welcome as was enjoyed there. Mr. France has a cabinet of collections that is well worth the time and trouble to go and see.

The enjoyment of the meeting, so many being there, and the new acquaintances made, gave us no time to indulge in any bad grammar about the drenching torrents that poured down along the road to our homes. Such gatherings are not only a gain of knowledge, but they promote benevolence, charity, and good will toward all men; and if there was any exception to the above, it is to be regretted by the majority. The next convention, if not otherwise changed, will be held in Lancaster, Grant Co., Wis., of which due notice will be given.

The following is the list of names corresponding to the numbers above:

1. James Armont, Argyle.
2. John Hohmann, Durango, Iowa.
3. Mrs. N. E. France, Platteville.
4. Frankie France, Platteville.
5. N. E. France, Platteville.
6. Miss Ida Smith, Darlington.
7. Mrs. E. Pike, Boscobel.
8. Mrs. W. Bailie, Lancaster.
9. Mrs. H. Gilmore, Georgetown.
10. Mrs. M. M. Rice, Boscobel.
11. Mrs. R. K. Jones, Boscobel.
12. Ben. Rice, Boscobel.
13. H. Evans, Wauzeka.
14. E. France, Platteville.
15. E. Pike, Boscobel.
16. Mrs. R. D. Wilson, Platteville.
17. Mrs. H. C. Gleason, Lancaster.
18. Mrs. E. France, Platteville.
19. William Kaump, Cuba City.
20. R. L. Clark, Georgetown.
21. John Clark, Potosi.
22. Joseph Patzner, Potosi.
23. Charles Patzner, Potosi.
24. Henry Franke, Potosi.
25. G. W. Kendall, Boscobel.
26. R. D. Wilson, Platteville.
27. John Kemp, Jamestown.
28. R. K. Jones, Boscobel.
29. L. C. Fuller, Dubuque, Iowa.
30. W. H. Prideaux, Bloomington.
31. William Seeman, Boscobel.
32. James Harker, Argyle.
33. W. J. Bailie, Lancaster.
34. H. C. Gleason, Lancaster.
35. Austin Dexter, Boscobel.
36. M. M. Rice, Boscobel.
37. Henry Clark, Potosi.
38. John Kemp, Jamestown.
39. A. E. Cooley, Mt. Hope.
40. Mr. McLean, Platteville.
41. Delos Ricks, Boscobel.
42. George Fox, Big Patch.
43. H. C. Gilmore, Georgetown.
44. J. L. Lewis, Dubuque, Iowa.
45. James Wisdom, Boscobel.
46. J. W. Van Allen, Haney.
47. E. D. Peake, Jamestown.
48. Norman Clark, Potosi.
49. Seaman Howe, Platteville.
50. Martin Oudyn, Platteville.
51. Walter Pretts, Platteville.
52. Charles Nye, Jr., Platteville.

Boscobel, Wis., Oct. 13. BENJ. S. RICE.

Here is what another says of it:

This was the poorest honey season in this section ever recorded. Average, 14 lbs. surplus, from 1656 colonies, as reported last meeting, Oct. 8, the date of the picture. No foul brood has ever been in our circle of members. We raise mostly extracted honey, and sell it in the West. N. E. FRANCE.

Platteville, Wis., Nov., 1890.

We do not often give reports of local bee-associations; but along with it as above came a most magnificent photograph, and we could not resist the temptation to have the same reproduced in half-tone along with the report, so that our readers might enjoy it as we did. Why, it is inspiring to look upon those faces, and there are several of them that form quite a pleasant study. The natural poise of most of the figures, and the depth of expression of the faces, is most excellent. Of course, the reproduction of the above is not quite equal to the photograph, but you get nearly the effect by holding it a little further away than the average reading distance, say about 14 or 15 inches. There, now, notice particularly No. 14. Why, that is our old friend and veteran bee-keeper, and correspondent, E. France. Then in the foreground, No. 5, is Mr. N. E. France, and Master Frankie France beside him. The light was a little too strong for his eyes, evidently. I wonder if Miss No. 6, with the papers in her hand, was one of the essayists of the day. (The figure 6 does not show very plainly, but its location can not be mistaken, for it is between 5 and 7.) Miss Smith looks as if she might be equal to the occasion.

Right here I wish to urge upon all our readers the necessity of forming, if possible, local associations. Make some prominent bee-keeper its president, and some other one, equally prominent, it may be, its secretary. After that, organize a good rousing society, and see what a nice lot of people bee-keepers are. Oh, yes! after you are well organized, affiliate with the N. A. B. K. A. While we can not promise to publish reports of these local associations we will do all we can to encourage them. Let the good work go on. E. R.

RAMBLE NO. 34.

AT THE RHODE ISLAND STATE FAIR.

The morning of September 22 found the Rambler at the railroad station, and ticketed for Providence, R. I.; and we were soon caught up by the train and hustled rapidly through the country. When we had become comfortably seated, and glanced at our neighbors, we found a very bright and active-looking young man attracting much attention. He was in charge of an officer of the law, manacled, and on his way to jail. Every one who came near was invited to look at his shining bracelets; and we never had presented to our vision a better object-lesson of cause and effect than when a bottle of liquor dropped from his side pocket, and, before restoring it, it was raised to his lips. The bottle and the shackles! Our thoughts ran into a train of moralizing, and the following lines from Pope came forcibly to mind:

Vice is a monster of such hideous mein,
As, to be hated, needs but to be seen;
But seen too oft, familiar with its face,
We first endure, then pity, then embrace.

This young man had entered into temptation, endured, pitied, embraced; and instead of living a loved and useful member of society, this one evil had made him a felon. Down with the traffic that fills our jails with so many wrecks! is the watchword of the Rambler. The last we saw of our neighbor, he was still showing his shackles to people on the street as he was hurried along to jail.



We whirled merrily along through the famous Hoosac Tunnel, and over a very winding way among the charming mountains that thus early began to be tinted here and there with the glowing autumn foliage. But few farmhouses were seen in these valleys; but we now and then came suddenly upon thriving villages. As we neared Worcester the country looked more thriving agriculturally, and a machinist of Worcester gave the Rambler much information about this portion of Massachusetts, and of Worcester in particular. One item of interest to bee-keepers is that here the first wire nails were manufactured in this country. The wire-works occupy a large space in the city, and employ 3700 men, and make an immense amount of wire and nails.

We arrived in Providence in the evening, and, after a night's rest at the Merchants' Exchange, we were ready for the duties of the day, and that was to attend the R. I. State Fair, held in Narragansett Park, and award the premiums in the bee and honey department.

We reported at the secretary's office; were shown where to find the sweet things, and proceeded to take a private inventory before we made our identity known. In our pre-ramble around the room we came across a young man by the name of Arthur C. Miller, and we revealed our identity. Bro. Miller then passed our identity around among the rest of the bee-keepers, and we all made a mutual exchange of identity by clapping hands. "Yes," said Mr. A. M. Cole, "I knew the Rambler as soon as he came in. That long-tailed coat, that umbrella, and that nose, looked so natural." We found not only a happy-looking crowd of bee-keepers, but a show of magnificent proportions; and we observed aloud to the friends, that Little Rhoda had a better display than the great Empire State ever had. There were nearly 100 entries, and about \$130 in premiums to award. The R. I. Experiment Station, in charge of Prof. Cushman, made a fine display which did not compete for premiums. Nearly every style of hive in use by prominent bee-keepers was in this display, and a novel feature was a large cage in

which a natural swarm was clustered on a branch of a tree, as in natural swarming.

The exhibit of comb and extracted honey proved by its quality and quantity that Rhode Island had not suffered much from a dearth of honey, and bee-keepers were accordingly feeling well. The various races of bees were represented in five full-sized glass hives and nine nuclei. The honey department was filled from morning until evening with a crowd of curious and interested visitors, and it was pronounced one of the features of the fair. From the exhibit of appliances we gleaned the fact that Rhode Island bee-keepers are as ingenious and progressive as any in the world. This down-east Yankee ingenuity was manifest in Mr. Miller's foundation-fastener, illustrated some time since in GLEANINGS, and which is gaining favor with bee-keepers; also Dr. Merchant's crate for comb honey, which we will try to describe in the future; also many articles in the exhibits of Mr. Thos. Pierce, A. M. Cole, Mr. Nivens, and Prof. Cushman, all showing ingenious labors for the elevation of our industry.

Aside from bee-keeping, the Rhode Island Fair was in every way a success. Every department was large and well filled; the weather was exceptionally fine, and 50,000 people were upon the grounds during the best days.

Narragansett Park is in the suburbs of Providence, a no mean city of about 130,000 population. A drive with Mr. Miller through a good share of it gave us a chance to see its many points of beauty and historic interest. Among the thousands of noble shade-trees in the city are a great number of English linden, making excellent pasturage for city bees, of which there is quite a number. As those conversant with the history of Rhode Island are aware, this city was founded by that liberal-minded old man, Roger Williams. The people venerate his name to the present day; and his familiar greeting, "What cheer?" is found upon many places of business. After he had been buried 200 years, or, as a satirist expresses it, "until he became sufficiently dead," he was exhumed and buried in Roger Williams Park, where a splendid monument is erected to his memory. Upon digging to where the remains ought to have been, it was found that the roots of an apple-tree had completely absorbed the bones, and taken the form of a man. This curious root formation is now to be seen in the historic museum of the city. As several generations had eaten the fruit of the tree, the question was seriously asked, "Who ate Roger Williams?" Our satirist happily explains the situation:

But a jolly old apple-tree rooting around,
Seeking for phosphates under the ground,
Followed his back-bone all the way down,
And old Mrs. Williams's too.

What's bred in the bone, in the flesh will show;
What's bred in the root, the fruit will know:
For two hundred years this fruit did grow,
Till posterity ate him up.

RAMBLER.

BEE-HIVES.

A SUBJECT THAT INTERESTS ALL BEE-KEEPERS.

In my bee-keeping experience I have found that I could generally get the attention of almost any bee-keeper when I had a new hive to exhibit, or was ready to discuss the hive-question. In fact, there is nothing connected with bee culture that will attract the attention of the average bee-keeper, or one that interests him more than a good bee-hive. Almost all bee-keepers are looking for something better in hives than what they have in use. In my day I have devised not far from twenty different

styles of bee-hives; and all but one were discarded after testing them a few seasons. There are several points I never lost sight of when trying to construct a practical bee-hive. Some of the points are these:

1. A proper brood-frame; 2. A hive suitable to winter bees successfully on the summer stands; 3. A hive so constructed that it can be set in the sun without protection all summer, and without danger of destruction of the combs or of roasting out the bees; 4. A hive so arranged that the largest amounts of both comb and extracted honey can be secured.

In some of the hives I have devised I could not combine all the desirable features here named. In my last attempt to construct a practical hive, and one suited to most classes of bee-keepers, I think I have combined all the best features. This hive is called the

BAY STATE CLOSED-END-FRAME HIVE.

I do not claim, by any means, that the Bay State is the ideal hive; but I do claim that it is good enough for any bee-keeper, and that it has but few if any objectionable features. I will describe some of the good points of the Bay State, and explain the illustrations in as few words as possible.

Fig. 1 shows the brood-chamber, which is merely eight closed-end frames, two side-boards, and two iron rods with thumb-nuts at each end. The frames rest on a bottom-board (illustrated in Fig. 5), and which is described further on. Resting on the brood-frames are four section-cases, each containing 24 1-lb. sections. This case, like the brood-chamber, is composed of frames or section-holders, as some bee-keepers call them. The broad frames, as well as the sections, are held firmly in position by being clamped between two side-boards through which runs an iron rod, which also has thumb-nuts at the ends. A description of the case will be given further on.

It will be seen in the illustration, that the cap which covers the section-cases is the same as used on the hive shown in Fig. 3.

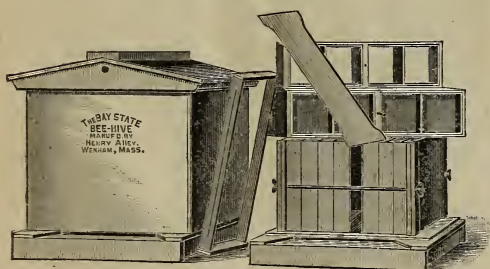


FIG. 2.

FIG. 1.

BAY STATE HIVE DISSECTED AND READY FOR WINTER.

The Bay State hive is used in summer exactly as is shown in Fig. 3. Ninety-six sections can be used to good advantage on the hive at the same time. I have had colonies fill all in one good season—something which is considered a big thing here, when it is known that our honey season is of but a few weeks' duration, including both favorable and unfavorable weather.

Now a word about the way we manage the Bay State hive to get comb honey, and to use so many sections at one time. Of course, no sane bee-keeper would think of placing 96 empty sections on a hive at one time. One case of 24 sections is enough to start with, even with

the strongest colony. When one set of sections is pretty well filled, it is removed, reversed, and a new set of sections put on the hive, and the first set placed upon that, and so on till there are three or four sets of sections, or as many as the bees can work in at one time when tiered up. The passageways through the four cases are direct from the brood-chamber to the top sections. By this plan the empty sections are at all times nearest the brood. I believe that the sections can be put nearer the brood in the Bay State hive than in any other one now in use. This is a point I have tried to incorporate into all the hives I have devised.

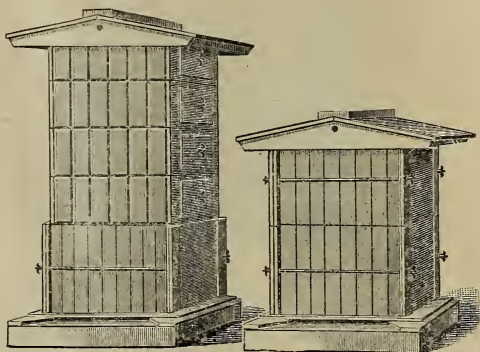


FIG. 3.

FIG. 4.

BAY STATE HIVE FOR COMB OR EXTRACTED HONEY.

Another good point about this hive is, that it is not necessary to use any queen-excluder between the section-cases and the brood-chamber; and, furthermore, of the thousands of Bay State hives in use, no queen has ever been known to enter the sections and deposit eggs therein. Can this be said of any other hive in use? By reversing the sections when partly filled with honey, the bees attach the combs to all sides of the wood. This is a feature appreciated by all who find it necessary to ship honey a long distance to market. Bear in mind, that 24 sections are reversed at one time, and none can get out of place during the operation.

Here is another point about this section-case worthy of mention: The sections are all incased in wide frames, and it is impossible for the bees to get at them to soil them with propolis or by traveling over them. At the same time, every section is held in a perfectly square position.

Fig. 4 represents the Bay State hive as used for extracted honey. There are two sets of brood-frames—one over the other, with a queen-excluder between the two hives. On the top is used an ordinary honey-board, and then all is protected from sun and rain by a hive-cap, the same as seen in Fig. 4. A small stone, or weight of any sort, will prevent the wind from blowing the cap off. What little rain will reach the frames or section-case can do no harm.

Fig. 2 illustrates the hive as prepared for winter. By examining Fig. 5 (bottom-board) it will be seen that G G and F, are strips of wood upon which the brood-nest rests. These strips are $\frac{3}{8}$ of an inch thick. The outer case shuts down outside these strips, thereby completely excluding all water, and thus preventing the packing, when any is used, from becoming wet. As the entrance, E, E, is below the level of the bottom-board, and directly under the strips the frames rest on, no water can enter the hive there.

The sides of the winter case are but $\frac{3}{4}$ of an inch thick ($\frac{3}{4}$ board split), thus adding materially to the lightness of the hive. When complete in all its parts this hive weighs but 35 lbs.

Fig. 1 gives a good idea of the brood-chamber, section-case, etc. One frame is removed from the brood-nest to show the saw-kerf in the top-bar, for inserting foundation comb-guide, or for fastening full sheets of foundation when desirable to do so. The foundation is placed in the kerf, and then three one-inch wire nails are driven through the bar to hold the combs in place. The work is quickly done; and, when properly done, the foundation will hang perfectly true within the frame.

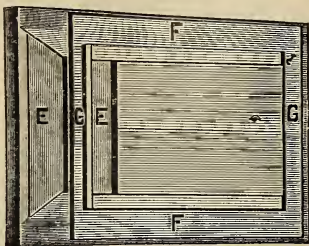


FIG. 5. BOTTOM-BOARD.

It will also be seen in illustration, Fig. 1, that one wide frame is removed from the section-case, thus showing the sections and the separators, which, it will be seen, run the full length of the case.

The Bay State hive has but 8 brood-frames, and a capacity of about two-thirds of a ten-frame L. hive. We have used this hive six seasons, and find it large enough for all practical purposes, and first-class in every respect. The brood-chamber is so compact and so well protected from the weather by the outer case, that colonies breed up rapidly and quickly in the spring. No hive can winter better on a summer stand.

The hive is so constructed that the closed-end frame or the L. frame can be used without any change to the bottom-board. Of course, the L. frames must be used in a box or case so that the frames can hang on rabbets.

Wenham, Mass., Dec. 1.

HENRY ALLEY.

Our new Dovetailed hive with fixed frames has very many points similar in principle to the Bay State. You say that queens have never been known to enter the upper story of your hive. But, friend Alley, they will do so *sometimes* in all hives without perforated zinc, and yours would hardly be an exception. We have had no reports that queens went up into the upper story of our Dovetailed hive; but we have no doubt that there are instances when the queens have gone above. The outside case of your hive is, without doubt, a nice thing. Without knowing that you had such an arrangement we (that is, the younger part of the editorial staff) have been having a sort of leaning toward a case almost identically the same. Twenty-eight of our colonies have such cases over them for the winter, for experiment. As to how it will winter bees, you are silent in your article; but in your journal you have spoken highly in its praise.

THE ADVANTAGES OF THE CLOSED-END FRAME.

MR. L. C. ANTELL GIVES VALUABLE TESTIMONY.

As a bee-keeper here in the West, I have thought for several years I was nearly alone in the use of the closed-end brood-frame. But I was conscious of the fact that its merits here were not fully appreciated.

Now, the question has been raised, "What are its merits?" I will state how I came to use them, and why I adhere to them.

When our first swarm of bees was bought, which was in 1871, it was put into a box hive. The next year it gave two swarms, and probably 25 lbs. of honey, which we then thought was a prodigious crop. By mismanagement we wrecked one of the colonies. We were so wrought up by this loss that we talked with every person who had bees in our vicinity, and learned from them all they knew on the subject, and that was but precious little. We borrowed Langstroth's book, "The Hive and Honey-bee." Also hearing of M. Quinby's work, "Mysteries of Bee-keeping Explained," it was purchased and read. Soon we had on our table nearly all that was then printed about bees, and contents discussed. As yet we used only the box hive; but now it *must go*, and be replaced by a movable-frame hive.

After careful study we decided that the Quinby hive would be best for wintering purposes, so one was ordered, and all my first hives were made after that pattern. I think it was after using these hives two years that I happened to purchase a colony of bees in a hive with hanging frames—the Langstroth.

WHY THE CLOSED-END FRAMES HANDLE AS EASILY AS THE HANGING.

It occurred to me, "Now is the time to make a test of hives and frames." At the close of the season it summed up something like this: There was no difference in the amount of honey stored. Difference in hives did not figure much. Quinby hive cost most, but was best for outdoor wintering. The decision, therefore, must rest on the ease of manipulation of frames in the hive. I have always produced nearly all comb honey, and the surplus combs could be handled about as easily in one hive as in the other, so that did not count. But with my closed-end frames, during the honey-flow I could slip out one, two, or three brood-combs and replace them without disturbing the surplus receptacles; while to do the same with hanging frames, the surplus receptacle would have to be removed, then move at least two of the brood-frames in order to have room to take out the first frame; and in replacing I had to be much more careful than with closed-end frames. But if all brood-frames had to be handled, there was a still greater difference. In this case the supers would have to be removed from and replaced on each. But in using the closed-end frame, pry apart, leaving two, three, or even four stick together with propolis; lift them out of the hive, three or four together, and replace them in the hive in the same condition, push them close together; close the hive and the work is done. They are always properly spaced.

OBJECTIONS TO HANGING FRAMES.

With the hanging frame there is always the difficulty in getting out the first frame, so as not to kill bees or make them angry; then instead of handling three or four at a time, having to take out one by one. But putting back the frames is worst of all. They must be put in one by one; and when done as carefully as you may, perhaps there is not half room enough

for the last comb and nothing to do, but re-space again; and when done—oh! too much room, and the work has to be done the third time. Have not all who use narrow frames had a similar experience many times?

THE ADVANTAGE OF REVERSING.

Another real advantage of the closed-end frame as I use it, is, that when the combs are out if any are not built down to the bottom-bar they are just as easily placed in the hive with the bottom-bar up; and if left so a few days, when honey is coming in freely they will be built solid to the bottom-bar, ready to be turned back with the top-bar up when the hive is opened again.

HOW TO PREPARE HIVES WITH CLOSED-END FRAMES FOR MOVING.

When hives are to be moved, put a rope around the hive, tighten it with a short stick, tack the entrance-blocks. Now all is solid, and ready to be placed on the cars, or carried on a wagon, if the weather is cool. If the weather is hot, of course there should be wire screen instead of roof on the hive.

OBJECTIONS TO THE QUINBY HOOP-IRON HOOKS.

The hoop-iron catches at bottom of the end-bar are on nearly all our frames: but in practice we hardly ever use them, as they get filled with propolis and wax. They work so easily without, simply shove them close together, then put the quilt or section-case on, and they will stay in position all right.

Were I now to begin keeping bees, with just the knowledge I now have, the full closed-end frame would be my choice. I am not sure but those using the hanging frame will find it to their advantage to make all their new frames with the upper half of the end-bars $1\frac{3}{8}$ inches, and thus in a measure secure the benefit of closed-end frames.

L. C. AXTELL.

Roseville, Ill., Dec. 2.

At the outset I will say that, when we speak of hanging frames we mean those *not* fixed. There, now, didn't I tell you so? and I am very glad that I have so good authority as Mr. Axtell in the West, and Mr. Elwood and Mr. Hoffman of the East, to bear me out in the fact that fixed frames can be handled just as rapidly (and I think a little more so) as the hanging frames. Mr. Axtell speaks from extended experience, in the production of many tons of honey, and every word he says in reference to the manipulation of closed-ends I saw verified in the apiaries of the East. It takes a good deal of hammering to make folks see the point; but at the risk of harping on one thing a good deal, I am going to say again, that, where the fixed-frame people gain time over those having frames not fixed, is in the fact that the latter can handle *four or five at a time*. They do not bother with handling a single frame if they want to get at the center of the brood-nest. They simply take out all the frames *en masse* up to the point of comb surface they wish to examine. In this way they can almost handle *hives* instead of *frames*. Read over again what Mr. A. says on this point.

Our friend speaks of the hooks on the bottoms of the old Quinby frame as being somewhat objectionable. Very likely they may be dispensed with. But in Mr. Elwood's apiaries these

hooks had neither propolis nor wax on them. In fact, the bees could not get access to them if they desired, without going clear to the outside of the hive to chink in the wax and propolis—a thing they would not be likely to do. But it is no more than fair to state that Mr. Elwood uses a modified Quinby system. As he is soon to present to our readers a series of articles, I will not speak further on this point.

Mr. Axtell alludes to the nuisance in removing supers to get at the lower frames in the L. hive. Why, on our regular hives, the Dove-tailed for instance, we have no trouble, because we lift a whole upper story off at once. Then we have perfect access to the brood-frames below. If the same were fixed, as, for instance, the Hoffman, we have all the advantages that our friend speaks of.

Friend A. mentions the advantages of an end-bar, widened at the top $1\frac{3}{8}$ inches, for ordinary hanging frames. This would make virtually the Hoffman. I think this one handles fully as easily as the closed-end, and for ordinary hanging-frame hives it is perhaps the best of the fixed frames.

Now, dear readers, if good and reliable witnesses say a thing is true, that either the Hoffman or closed-end frame is not an awkward implement to handle, but, on the contrary, possesses many decided advantages over the old hanging-frame, let us not be so conservative as to block the wheels of progress. It may not be feasible or advisable for old bee-keepers of the hanging-frame school to change; but it may be an advantage for the new crop of bee-keepers coming on, to get started along the right track. Still further, as old combs are to be continually replaced in large yards more or less, it may be desirable for old bee-keepers to work in, for instance, the Hoffman, by degrees. Experimenting along in this way is quite safe, and is not likely to lead to any serious results, should this fixed-distance craze prove to be a mistake.

I hope some of our closed-end, or partially closed-frame friends, will not be so modest as to keep quiet much longer. There is friend E. T. Flanagan, who has used the Hoffman. I believe we have not heard from him very lately. Then there are several others. Let us have truth, wherever it may fall. We are glad to hear from Mr. L. C. Axtell. It is a good thing to get a glimpse of both sides of the house—husband and wife side, I mean. Both are capable bee-keepers.

E. R.

THE HIVE FOR THE HONEY-PRODUCER — SINGLE OR DOUBLE WALL?

A REVIEW OF THE HIVE-QUESTION.

As a great many bee-keepers will soon be thinking about the hive they will use next season, a few words on this subject may not be out of place now. Perhaps no one will dispute the

fact, that the mass of bee-keepers who are keeping bees for profit demand a cheap, simple, practical hive. Shall this be a single-walled or a chaff hive? is a question not so easy to decide. If the single-walled will do, then we need look no further than the Dovetailed; but this must be protected, if wintered outdoors; or, if wintered in the cellar, spring protection is needed. It has been suggested by Ernest and several others, that an outside case be made for winter; but A. I. Root predicts that such cases will never come into general use, and I think he is right.

Well, what about chaff hives? I think this: The heavy, expensive chaff hive, with walls five and six inches thick, requiring two men to move around, never has been used to any great extent by our large honey-producers, and is too expensive and bulky to ever become popular with the mass of bee-keepers. It seems to me that such thick walls are worse than useless, as they prevent the warmth of the sun from reaching the bees, which I consider quite an advantage, especially in the spring, after brood-rearing has commenced. I also consider a double bottom useless, for, if the hive stands as near the ground as it should, the packing will become damp.

I have been using a hive several years that I think would suit the class of bee-keepers spoken of on page 697; i. e., those who produce comb honey, and winter on the summer stand. This is an eight-frame chaff hive, arranged for two inches of chaff around the lower story; but I have used the most of these without chaff, and can see no difference in wintering. The hive is made from light lumber; and with a handle on each end it is almost as easy to move as a single-walled hive. It has a side-opening in the upper story, which is very convenient for taking off surplus or working in the brood-apartment. With thick top-bars and a T-tin super containing a follower to key up the sections, I consider this the most practical, economical, general-purpose hive in use. G. H. KIRKPATRICK.

Union City, Ind., Nov. 29.

Friend K., you strike a chord that affects most of us. We want an all-purpose hive. The regular chaff hive which we have been selling is rather large and cumbersome to move about, and, besides, expensive. What we want, I think, is a single-walled hive so arranged that it can be converted into a winter hive for outdoors with small expense, when so desired. If an outside case will winter bees successfully in most latitudes, then I think its ultimate adoption is assured, by the outdoor-wintering class. The one thing in the way has been this: If such a case shall require packing, it will make it objectionable. But you say that you can see no difference between hives packed and those not packed, so far as wintering is concerned. That is just the information we are after. Your chaff hive may be small and compact, but it can not be as small and compact as a single-walled hive. For those who desire to winter outdoors, they want outside protection of some kind to put around the small hives. Now, then, when they come to move an apiary all they have got to do is to move the small hives, and, in the fall, cart, in a large hay-rack wagon, say, the large outside cases to the yard. See remarks on this point from R. F. Holtermann, on the next page. E. R.

BEE-HIVE LARGE OR SMALL.

GOOD ARGUMENTS FOR LARGE HIVES.

In reading the magazines devoted to bee-keeping I often meet with articles describing experiences with bee-keepers with their hives differing from my own. In 1861 I adopted the Kidder hive. The inside measurement of its frame is 11 by 13 inches. The Kidder is a double hive—or, rather, two hives in one. The inner part holds eight frames; and the outer part, when used by itself, holds eleven frames. The same frame fits both, running the longest way in the smaller part, and the shortest way in the larger part.

I constructed 50 of these hives, and used them as double hives until they were full of bees. Then I separated the hives, using each part as a hive. The first difference between them that I noted was that the small hives sent out the most swarms, and not very large ones. They were slow to work in boxes, and would often swarm a second time before doing so. The large hives, on the contrary, would send out much larger swarms, which would go immediately into the surplus apartments, and, as a rule, gave much larger returns for the care bestowed upon them. This comparison I have carried on for twenty-five years; and the result is, that I am now using the small hives for kindling-wood, having destroyed fifty of them for that purpose.

I have made some changes in the method of using my hive, which can be applied to any hive. I have changed the entrance so that the frames run across it. This enables me to put in one or more frames, and have a nucleus hive, with but one division-board, or adapt the size of the hive to the capacity of the swarm, up to the full hive. With frames running the other way, two division-boards would be required to accomplish this. I like this hive well enough; but if I were going into the business anew I would use the Langstroth or Simplicity, because they are more generally used; and if you wish to sell, they are more likely to suit your customer. I would adapt any hive to this method of using the division-board. The bees do not seem to know or care whether they enter the hive at the end of the frames or at the side. They deposit most of the pollen in the frames next to the entrance; and if you do not like the bees to have access to the pollen in the winter, you can easily remove these frames and substitute frames of honey. My largest hives, as a rule, have the most bees, breed faster in the spring, put in more surplus honey, swarm less and winter better, than the smaller hives.

CAGING QUEENS TO PREVENT SWARMING.

Some cage their queens during the honey-flow, for fear they will have too many consumers to eat the honey after the honey season is over. My experience is, that a large swarm is almost sure to store more honey than they eat, while a small one might fail in this respect. Then if you have a "giantess" for a queen, a large hive will give her a chance to do for you the best she can. A poor queen is of little or no value except to hold the swarm until a better one can be raised. Queens over two years old are, as a rule, not as good as younger ones.

Give me a good-sized hive and a young and vigorous queen, and I shall expect my share of the honey if there is any in the blossoms.

L. C. WHITING.

Saginaw, East Side, Mich., Dec. 1.

We are very glad indeed to see our old friend Whiting contributing again to GLEANINGS. His experience with large hives agrees remark-

ably with that of friend France in many respects. My experience with large colonies agrees with the above. The powerful ones get honey when ordinary colonies seem to be losing, and yet I could never quite fully understand it either.

THE OUTER WINTER CASE.

SOME OF ITS ADVANTAGES.

I should like to give a few reasons why the outside protecting case for the Dovetailed hive, as proposed by E. R. Root, will be superior to the old chaff hive. It will be cheaper and less complicated. The shell can be lifted from the hive, and then the hive manipulated as a single-walled hive in summer. I say, in *summer*; for should I take them they would certainly be retained for shading purposes during the heat of the summer. Of course, the chaff hive answers the same purpose; but the difference is in hauling bees, shipping, carrying into the apiary, etc. There is a wide difference between the two. In shipping, the shells (or cases) if desired can be shipped ahead by freight, and the bees expressed. In hauling, the experienced apiarist can take a full load of bees and send an inexperienced man the following day with the shells. In fact, I can not help thinking that a more valuable thing has been designed that we at first have given credit for. In summer we place this shell about the hive, say propped up on four posts, so that the shell has the same relative position to the upper story that it had during winter. With the body in that way, we secure a current of air between the hive and shell, and have the sun effectually broken.

PROPOLIZED QUILTS.

I lately saw an excellent idea in regard to propolis. Geo. Morris, Stony Point, scrapes the propolis from the frames and quilts; and after heating it he brushes it on the quilts he is about to put on the hives. The result is, the bees will not bring in nearly so much propolis, and thinner material can be used for quilts, as the bees will not gnaw through them. I last saw them Sept. 1. They were then not even attached to the top-bars. How they are now, I do not know.

R. F. HOLTERMANN.

Romney, Ont., Nov. 17.

The outside winter case is an old idea; but the mere fact of its being old may not alter its value to the modified bee-keeping of to-day. Yes, there is quite a point for such protection; viz., sending the outside cases to the apiary with cheap help, either before or after the bees in the small hives are moved. It is not feasible to move bees in large chaff hives. Mr. Manum does not do it.

THE NORTH AMERICAN BEE-KEEPERS' ASSOCIATION.

DR. MILLER TALKS TO US ABOUT IT.

It isn't so many years since the senior editor of GLEANINGS not only stayed away from beekeepers' meetings, but, I think, advised others to do so. "A wise man seldom changes his mind; a fool, never." Friend Root is not a fool, so in this case he has changed his mind, and now wants some one to punch him up if he should try to stay away from another meeting of the North American. Good!

Some pretty severe strictures upon the course of that same North American moves me to ask space in GLEANINGS to say some words about it. An association of the kind is needed for the best interests of bee-keepers; and until such association is just what it ought to be, it is right and proper that it be discussed. Now is the time to begin such discussion, without waiting to take up time at the convention at Albany. So, friends, if you see something that needs mending in the ways of the association, let us have it in print, and have it soon, so that any thing that needs it may be mended if possible before the next meeting.

One point that has come in for its full share of criticism is the matter of obtaining reduced railroad rates to the convention at Keokuk. To get the best attendance we need low railroad fares always; and this year especially, when crops were so poor, we should have had reduced rates to Keokuk. Some one may suggest that, as I was a member of the Executive Committee, I am condemning myself. I was only treasurer, a sort of silent partner, and it would have been out of place for me to put myself forward and attempt to do the work of the president and secretary. Besides, I did urge the matter. Really, it is the secretary who usually attends to things of this sort; and the only thing left to be done now, is to pass a vote of severe censure upon Secretary C. P. Dadant for culpable neglect of duty—a neglect for which those who attended had to pay in dollars and cents, and which prevented some from attending.

But, hold on—hold on! In stating what *ought* to be done, it is important, in many cases, along with the *what* to give the *how*. And before we call down too many anathemas upon the devoted head of the poor secretary, it may be well for some one to rise and tell how he could have got reduced rates. If I am rightly informed, application was made, at an early date, to the railroads for reduced rates, to which they replied that it was too early, and that the matter could not even be considered by them. After waiting months and using what leverage could be brought to bear, the secretary finally got an answer. The railroads would grant no favors. I don't know what else the secretary could have done. Do you? If you do, tell it; and if you know any thing that will help in the future, tell it; for that is of more consequence than the past.

At Keokuk it was urged that a place should be selected to which we could get reduced rates on account of something else than our meeting, and that was the weighty argument in favor of Albany. If the association becomes sufficiently large, I believe we may be able to command concessions from the railroads without any begging.

Now, friends, instead of standing off and throwing stones, let us come together and talk it over—in print. If there are wrongs, tell what they are; and above all, tell *how* they are to be righted. Some think the association should be effective in bringing up the price of honey to accord with its scarcity. Just the thing to suit me—if it can do so.

I am satisfied that good will come of discussion. Some mistakes will be shown and corrected. Other things will be shown impossible of amendment; and knowing this we will endure them the more patiently.

One of the worst things about the association has been the flimsy character of its organization, as mentioned by Pres. Taylor. The movement for its incorporation is a long step in the right direction. Some of our editors are making a push to secure funds from life-members, and use up the money. The secretary

has evidently been doing some thinking about this, and thinks we ought to "consider the matter of placing the funds that may hereafter be collected from affiliation and from life-memberships in some safe interest-bearing bonds, so that the capital that may be thus paid in be not squandered." He says: "Annual memberships ought to pay annual expenses, and the interest of the capital ought to furnish prizes and medals." There would be an element of permanence about this which is desirable. I confess, however, that I would just as soon see all the money in the treasury cleaned out every year, or nearly so, if some plan could be devised by which equal permanence could be secured. The affiliation fees will come annually, just as much as the fees from annual members.

Stability of membership is a desideratum never yet reached. We are, perhaps, behind all the world in this respect. Can not some means be devised by which a permanent membership of four or five hundred can be secured? It is done elsewhere, I think. Are the obstacles insuperable here?

Is there any sufficient reason why the "Beekeepers' Union" can not be merged into the N. A. B. K. A.? That seems somewhat permanent. Why not both together? C. C. MILLER.

Marengo, Ill., Nov. 26.

All right, friend M. We second all you say. In regard to reduced rates for the convention, we tried our hand at it here, and received courteous replies to the effect that the number in attendance was too small to admit of the reductions we desired. I guess this is so, friends; and therefore the only thing to be done is to get the membership up to 400 or 500, as you suggested.

ARTESIAN WELLS.

THE FLOWING WELLS OF FLORIDA.

Mr. Root:—You seem interested in flowing wells, so perhaps a few words on that subject will be acceptable. Along this, the east coast of Florida, there are hundreds of flowing wells. Most of the houses, even in the towns, have their well of water flowing, and no trouble about pumping. A pipe varying from one to four inches in diameter is driven down until it strikes rock, when a drill is put inside of the pipe, and the rock drilled until water is struck. Sometimes no rock is struck until nearly to water, and the pipe with a point is driven through to the water. There are several layers of rock with sand, etc., between them; and the more layers the pipe or drill penetrates after reaching the flow, the larger the flow of water, though I believe the water rises no higher.

The water is struck about 60 to 90 ft. below the surface, and rises, I believe, 16 ft. above sea-level, and usually fills the pipe. A three or four inch pipe, with a strong flow, makes quite a stream of water, and makes it very convenient, as the water may be piped into the house, used for irrigating, etc. As a well with an inch or 1½-inch pipe costs only \$50 or \$60, they are not very expensive. By using a ram, the water may be forced as high as is wished. The water is hard, and is said to be impregnated with sulphur. At this place, next to the ocean, there is a peninsula nearly half a mile wide; then the Halifax River more than a mile wide; then the mainland. Wells on the peninsula, or driven in the river, flow just the same as on the mainland. It looks strange to see fresh water bubbling up out of a pipe, and the surrounding water salt. The quality of water varies con-

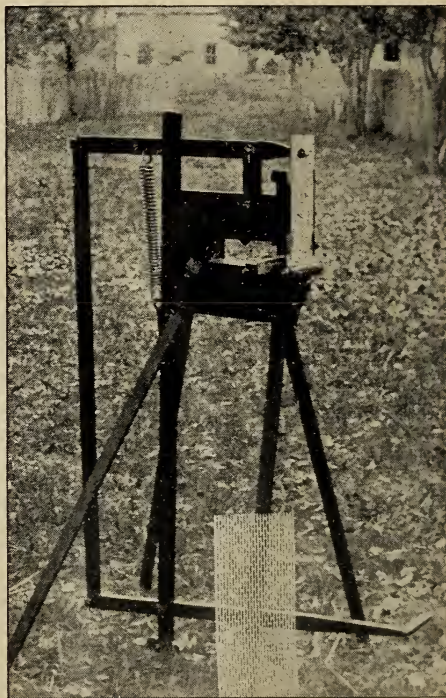
siderably in different wells. In some the sulphur is so strong as to be very offensive to some people; in others, little or none can be detected. The temperature also varies considerably. Daytona, five miles north of this place, is called the "Fountain City," from the number of wells it contains. JOHN B. CASE.

Port Orange, Fla., Nov. 24.

ANOTHER ZINC-PERFORATOR.

A SMALL FOOT-POWER MACHINE.

Find inclosed a photograph of a foot-power punch I have had made, which perforates four holes at one stroke. The whole thing is made of iron and steel, and is substantial and perfect. The die is held in a chuck, and regulated by four set-screws, and the teeth to the punch are of different lengths, and shaped so as to "shear,"



REESE'S FOOT-POWER ZINC-PERFORATOR.

which makes it cut easily, and with very little power. I inclose a sample of zinc, cut by my machine on the margin of a piece which came from you, I think, some time ago. The machine was made by W. T. Clifford, Wellington, O., who, I think, is to be congratulated. I want to have this machine on exhibition at the World's Fair, Chicago, 1892.

Winchester, Ky., Nov. 18.

J. S. REESE.

We take pleasure in presenting in half-tone the photograph presented by Mr. Reese. The appearance of the machine indicates that it was gotten up by a mechanic; in fact, the punches and dies are so accurately fitted that it perforated perfectly a piece of tissue paper which is before us. The samples of zinc were received;

and, if we were to judge, they are fully equal to the beautiful work done by Dr. Tinker. This, however, is a foot-power machine, and is limited to the perforation of only four holes at a time. The machine we use is run by power, and cuts 64 holes at one "chank." Of course, this will make foot-power work more expensive, if time is worth any thing. This not only reduces the power required but makes nicer work. You will notice that we are giving our friend a little free advertising, but we are glad to encourage a little original genius once in a while in this way.

DAYLIGHT BREAKING IN THE HONEY BUSINESS.

IMPORTANCE OF GRADING.

Mr. Root:—We had some of that dark alfalfa extracted. Half that you sent us was that color. The sample sent us was nice and white. After receiving it we did not write you about it, as we thought you would doubt our word. We sold some to a druggist here in this city. He always writes to send him honey of our own production. We answered him, saying we had some from another State, and quoted him prices. He ordered, but has not yet settled. He has always been a good customer. We hate to go and present a bill for the honey, as we know he was not pleased with it. Some we sold to each other New Orleans molasses.

We also bought some honey in this State, called clover. After receiving we found it to taste pretty strongly of buckwheat. Being disgusted with the above purchases we went to New York and ordered some extracted honey that was white. They had none but California. We took that. We asked them to sample each can before shipment. They said that the quality was marked on the outside of each can. When we received this a large share was dark and not of first quality. We are now thinking of not buying a single pound more. We are disgusted with the whole business. We have had only one shipment that was as represented, and that comes from—I am going to mention his name, for those who sell good goods ought to be known—C. H. Stordock, Durand, Ill. His honey is *every way* first class.

Always keep it before the bee-keeper about careful grading. I am firmly convinced that a large trade could be worked up for extracted for table use, and at good paying prices. All it needs is a first-class article. F. A. SALISBURY.
Syracuse, N. Y., Dec. 3.

Perhaps some of the friends wonder at the heading to friend Salisbury's communication above. It is simply because friend S. has begun to talk right out in meeting about his troubles. He is most surely right—that a big trade can be built up if we can be sure of getting honey that is according to sample and according to label. Now, while it may not be best to publish the names of all the friends who have not heretofore been conscientious, it certainly will be safe and right to put the good men right in print; and may be we can decrease the former and increase the latter by so doing. Friend S., neither you nor anybody else need be backward about complaining of things that are not as they should be. Fix it

up with your customer the best you can, and make out your bill; and if we can not trace it to the man who shipped us the honey, it is right and proper for us to bear the loss. Now, the main point is, can you give us the name or initials on the can or cans that contained the dark alfalfa honey?

GRAHAM BREAD.

WHY IS IT NOT MORE USED? ETC.

The facts are, the world is wedded to its daily habit of life. It insists on using bread made from flour which has been robbed of much of its best food elements by the bolting. Another objection which I once knew a lady to offer against the use of graham flour, was, that among her acquaintances those who used it were *infidels*! You have already treated us to a column about

"OUR DAILY BREAD."

In his "Science of Human Life," Dr. Graham devoted 40 pages to bread-making. Good bread is something that can't be *overdone*—unless left too long in a hot oven.

Now about those gems made of flour and water and a little baking-powder. Of course, they are nice. We often have them for a change. My wife calls them "popovers." They are certainly delicious, and, with butter, honey, and a glass of rich milk, are too good to—talk about!

But for every day in the year, gems made of absolutely nothing but flour (graham) and water, and a pinch of salt, in sweetness, delicious flavor, as well as hygienic elements, are perfection. Much importance attaches to the quality of the flour. That which is made at Akron, and sold by grocers, is not so good. It should be the entire product of clean wheat, ground and not bolted. *It has not* good keeping qualities, and should be obtained fresh from the mill.

TO MAKE GRAHAM GEMS.

Take of graham flour, quantity sufficient; a pinch of salt, with water to make the whole, when well stirred, of a consistency that, when dropped into the cast-iron gem-pan with a spoon, by its own weight it will form smooth. With a little butter, grease the gem-pan hot on top of the stove, and place it in an oven hotter than required for most kinds of bread. Note whether the gem-pan is hot enough to "sizz" when the butter falls into it; for if the oven is not heated hot enough in the start, the gems will be heavy and not fit to eat.

GRAHAM MUSH.

This is made by stirring graham flour in water boiling very hard. Salt to taste, and continue the boiling 15 or 20 minutes. It should not be made very thick. Serve hot with cream, or half cream and half milk, for breakfast, and cold with cream for lunch or supper.

RUSK.

Make dough of graham flour and water. Knead, and roll out on a bread-board; cut into slices, and bake in a moderately hot oven. After they have been baked, continue them in the oven with the door open until all the moisture has been dried out; break in pieces, and grind in a hand-mill. Serve with rich milk or cream.

Madison, Ind., Dec. 1.

A SUBSCRIBER.

Very good, friend S. We hope the readers of GLEANINGS will all give your recipes a good trial, even at the risk of being made "infidels," as your good friend puts it. Now, we do not quite understand the point she makes. Did she sup-

pose that the graham flour was the cause of the infidelity, or was it simply because those who were skeptical in their theology had a preference for graham flour? Never mind; if we can not agree on theology it is comforting to know that we shall pretty nearly agree on the healthfulness of graham bread.

MRS. AXTELL'S EXPERIENCE AT THE KEOKUK CONVENTION.

SHE CONSIDERS THE HALF-DEPTH LIGHT HIVES FOR WOMEN.

Friend Root:—I see, from reading GLEANINGS of Nov. 15, that you also was one of the number that enjoyed the International hugely. Yes, that is just the word that would describe Mr. Axtell's and my enjoyment of that convention, and I heard quite a number express themselves as its being one of the best, if not the best they ever attended. Judging from the way people acted, they must have enjoyed themselves, as they would get together at 8, or half-past 8, A. M., and remain up to 12 o'clock, then hurry out to their meals, and back again to commence the meeting at 1:30, and then remain clear up to dark. Gas was lighted, and some one would remark that we were not doing ourselves justice to remain so long, and asked that some one make a motion to be dismissed, when we would hurry out to our rooms and meals, and back again for an evening session that held up to about 10 o'clock; and, what was strange, each meeting was just as interesting as the first, and no one seemed to grow tired. If one grew tired of a position, he felt at liberty to change it or go out of the room; but I noticed they generally came back very soon. Now, why was all this enthusiasm, if it was not that we are engaged in a very interesting pursuit? Mr. Axtell felt that his work was such he did not know how to leave; and, not feeling well, I had to coax hard to get him started. I could see it almost made a boy of him again; and I thought that, if wrestling were a test of boyhood, there were several boys there—old gray-headed boys.

I should have liked to see more ladies there. I wondered why there were not more, when almost always the apiarist's wife or mother or sister takes equal interest with him in the bees. Was it because both could not leave, that one or the other had to stay at home to do chores, look after the family, etc.? I felt almost like accusing the bee-brethren of wanting the good times themselves.

From the little snatches of talk between meetings, as we met in the hall or in the sitting-room, at our meals, or in our rooms, too, we gleaned many useful thoughts. We liked the idea advanced by a Mr. J. D. Adams, of Nira, Iowa, that of being thorough in all we undertake with bees, as well as farming; of making two blades of grass grow where others made but one; of keeping the highest grade of poultry and taking the best of care of it, so that a small flock would pay better than twice the number of mongrels uncared for.

Dr. Jesse Oren, of Mount Auburn, Iowa, puts his bees in the cellar every fall, and goes to Florida, where he has a nice home also, to winter. He says one can buy an acre or two and build a small house, and live very cheaply if he wishes to. He can plant the ground to orange-trees, which come into bearing very quickly. Dr. Oren, before putting bees in the cellar in the fall, burns half a pound or more of sulphur in the cellar, to kill the mold-spores. Since doing

so, his brood-combs never mold. In placing his hives in the cellar, the first hive is placed at an angle of 45 degrees, with the bottom of the back end of the hive resting against the side of the cellar, and the entrance toward the floor. The next hive is placed in the same position, with the back end of the bottom resting against the top of the first, and so on until a row is placed clear across the cellar. The quilts are loosened around the edges, and left on; then he lays a board on top of the first row, and proceeds to place another row on top of the board, in the same position as the first row, and so on until he has all the bees in that cellar he cares to put in—from 225 to 250, I think he said. He makes a compact body of them, and leaves them but a few inches apart in the rows. He leaves them undisturbed until setting-out time in the spring. The hives being raised at the back, the dead bees all fall out, and can not choke up the hive. He said he had wintered thus some 20 years, and is generally very successful. He closes up his house and cellar, as he winters in Florida. Thus he escapes our Northern winters. He is about 20 miles from O. O. Poppleton, in Florida. The doctor is a very methodical man, keeping a close account of all his incomes and expenses, and can tell each year just how much his bees net him. The past year he made his bees pay, as his honey brought him several hundred dollars. I do not remember the exact amount, but it was a fair income. I think he said he had two farms besides. He says he never bothers with small colonies, but tiers them up, putting one on top of the other, thus preventing increase also. He first began the study of the ministry; but as his health failed him he took up the study of medicine and then of bees.

I was pleased with most of the countenances I met at the convention. Intelligence beamed from many eyes—as much so as you would meet at almost any other gathering.

It was a real pleasure to see so many clean-faced young men, and clean lips not stained with tobacco, as so many of the young men of to-day are not ashamed of the tell-tale quid punching out in their cheeks. I was sorry, oh so sorry! to know that to such lips was offered the wine-cup that biteth like a serpent and stingeth like an adder.

PRACTICAL OR ORNAMENTAL.

At the tea-table one asked of another if the lady sitting at the further end of the table was a practical or an ornamental bee-keeper. The question was handled along from one to another until it reached Mrs. J. M. Null, of Miami, Mo., for whom it was intended. Her answer was, "If 6000 lbs. of extracted honey, taken from 114 colonies the past season, by my own hands, except an occasional day's work from a hired man, constitutes me a practical bee-keeper, then I am practical." She also stated that she purchased her own supplies, as her husband was very much afraid of bees, and had his hands full of his own work—proprietor of the Miami House, and owner of two farms. She said she became interested in bees by reading GLEANINGS, and bought and brought some bees home, placing them some distance from the house, as her boarders had great fear of bees, and were horrified to think of her keeping bees; but by and by, being emboldened at seeing her work with them, they would come so near that she had to tell them they might get stung, as they were trespassing upon the grounds of the bees. Her neighbors, also, were becoming more interested in bees.

A BEE-KEEPER WHEN HEDDON WAS A BOY.

A very intelligent old gentleman by the name of B. Taylor, who said he had been handling

bees some 40 years, often having as many as 600 colonies, exhibited a hive of his invention, worked on the principle of the New Heddon hive, only his is 14¼ inches wide, and 15 inches from front to rear, while Heddon's is 12¾ wide and 18¾ inches from front to rear. The hive is in two parts, as is Heddon's. He said he used that principle when Heddon was a boy, and before he kept bees.

One feature of the hive we liked much was the band to set under the hive in wintering, to raise up the frames one inch higher than in the summer, as that is what we practice in our own apiary, and it prevents the hives clogging with dead bees in the winter. I believe I shall like his double super too, as it will be so much lighter for me to lift when full of honey, as I nearly paralyzed my arms in the summer of 1889 by lifting honey and heavy hive-covers. I believe it would be wise, where men expect their women-folks to care mostly for any one apiary, to make all the supplies, hives, covers, and all, as light as possible, for this reason. Several of us lady bee-keepers there at the convention at once said that that was a woman's hive. I was delighted when I found he was going to present one of his hives to me. I felt it was of the Lord, to lighten my work somehow, not by discarding our hive, but by making it and its fixtures lighter. Yet I think I shall like the Taylor hive very much, so I transferred a colony of bees into it as soon as I came home, so as to be sure to have it there for next season's work.

He claimed for his double super, that, when the middle sections were filled, the super could be turned around, thus putting the partly filled ones in the center, and the filled ones on the outside; also, in putting on supers in the spring, rather weak colonies need have but one of them until they get well at work, and then the second could be added.

He is a very practical man, making all his own supplies, except where pine is used, cutting the timber from the tree, drying his own lumber, and manufacturing his own supplies; and, judging from the samples he showed at the association, of sections and hives. Mr. Axtell says his work was first class, as he says it was done as well as the sample shown.

Roseville, Ill., Nov. 26. MRS. L. C. AXTELL.

(To be continued.)

Mrs. A., I most heartily indorse all you say in regard to the convention; and I am exceedingly glad that you have got acquainted with our friend B. Taylor. If you have a colony already in one of his light shallow hives, we may expect you to give this form of hive a good practical test. I believe, with you, that the Lord has called you to investigate this very matter, with the end in view of making the work lighter for our women bee-keepers.

SPECIAL DEPARTMENT FOR A. I. ROOT, AND HIS FRIENDS WHO LOVE TO RAISE CROPS.

DISPOSING OF THE WASTE PRODUCTS ABOUT OUR HOMES.

One pleasant thing about the business of market-gardening, either under glass or out in the open air, is that the market-gardener finds a *money value* in the very things that ordinarily are considered the greatest nuisances about our homes. We have already so thoroughly discussed the matter of disposing of sewage, night-soil, etc., that I need not go over the

ground again. My reason for taking up the matter once more is, that some new experience has come to us. Some years ago, when I asked about the best manner of disposing of the products of the out-buildings around our homes, some of the GLEANINGS readers referred me to the Smead system of dry closets, etc. We have, at the expense of a considerable sum of money, just had our entire plant supplied with the Smead closets. As I have watched the workmen, and carefully scanned, scrutinized, and experimented with every feature of their invention, I think I can tell you all about it. In fact, the biggest part of it is using simple principles that we bee-keepers have already for years been thoroughly conversant with. Over and over again, through our bee-journals, has been described a plan of ventilating a beecellar by connecting it with the chimney of the house. A stovepipe goes from the chimney down close to the floor of the beecellar. The draft from the stove *pulls* up all foul gases and bad odors. Well, this is the Smead system. But he puts up a great chimney—in our case, 30 inches square inside. This goes up 12 feet higher than the highest part of the roof of the building. At the bottom of this chimney, or stack, is a furnace. Any place to build a fire will do. The more kitchen stoves, bake-ovens, and every other kind of stoves, you turn into this chimney, the better. Now have your closet right in your house, anywhere you want it—close to the kitchen stove or dining-room, or down in the cellar, or upstairs. Or, if you choose, you can have a closet upstairs and one downstairs, and one in the cellar. The draft from this big chimney of yours will pull every bit of bad air and offensive smell away so completely that your closet will be as sweet-smelling as your sitting-room or pantry. The Smead folks furnish iron seats, with an iron lid to shut down. This lid is hinged so it shuts itself when not in use. The floor is cast-iron. This is painted with asphaltum, so that it can be washed whenever it need be. There are many little holes in this floor. When washing, the water goes right down through these holes, and any bad smell there may be in the room is drawn at once through the holes in the floor. If you make a smoke in the room by burning some paper, the smoke and even blaze will at once shoot down through these holes in the floor; and if the cover of any of the seats is raised, a burning paper held near the opening will show that it draws like the door to your stove. Haven't we been stupid, that we never thought of this before? Now, if you still prefer to have an out-building, as most farmers do, make a brick or wooden chimney to this wooden out-building. Have it go so high that there will be a draft to it. Such an arrangement will make any ordinary out-building ever so much sweeter and pleasanter, even if you do nothing further. When you are going through the country on the cars, just watch the out-buildings as you pass by the homes of our people. You will notice that many of them have a ventilating-shaft already—in fact, almost all *new* ones have. But these ventilating-shafts are too small and insignificant. Let them go up a good deal higher, and make them a good deal larger.

Now for another matter: If you have practiced drawing away the night-soil on wagons and sleds, as we have done for years past, you have found out that it is a very heavy material to handle, besides being very disagreeable. Well, how large a portion of this great load of offensive matter do you suppose is made up of water? Suppose you evaporate the water so you have only the dry residue. Let me give you a statement that will astonish you. The whole amount of accumulation of a large

schoolbuilding, of several hundred pupils, during a *whole term*, was carried away on a *wheelbarrow*. The watery portion had been all evaporated by the hot air of the schoolbuilding, after it had done its duty in warming the rooms. Right under the seats of the closets, about two feet from the ground, is a series of iron bars. These bars are far enough apart to catch the ends of dry bricks laid close together. Of course, there is an air-space all around each brick. Well, the hot air, after it has warmed the schoolrooms, goes under and through this brick floor, keeping the bricks hot and dry. The droppings, both liquid and solid, are evaporated as they accumulate. If, however, in warm damp weather, when the furnaces do not need to be used, the ordinary draft of the shaft is not sufficient to dispose of all the liquid, a slow fire is made to send enough dry air through the brick floor and up the shaft, to keep the thing sweet and clean. By increasing the heat you may *cremate* the entire contents of the vault at any time you wish. A furnace is also put at the base of the shaft, to be lighted whenever the janitor notices, by the action of the smoke from burning paper, that there is not sufficient draft up the large chimney. In other words, whenever there is a particle of smell to be detected by the *keenest nostril*, a great flood of dry pure air is sent through the whole apparatus until every thing is dry, sweet, and clean. Now, then, has any thing ever been invented to compare with such a system of disposing of these waste products as the above? Of course, ordinary homes do not require such an elaborate structure in all its details as the one I have described; this is specially for schools, factories, court-houses, and such places. The only rival system is the water-closet. But what in the world are you going to do with the sewage in the average country town, school, or factory? Champion Brook runs right through our village of Medina; but the man who would turn the sewage from a water-closet into Champion Brook, above the town, ought to be prosecuted, and doubtless would be. We have read in the papers of the great troubles the managers of the Croton Aqueduct (that supplies the city of New York) have had to keep sewage from being turned into it. There has also been a little breeze through the papers in years past, to the effect that it is not safe to send all our bad smells up a big chimney to fall down on our neighbors after a while. It seems to me, however, the absurdity of this objection should be apparent at once. All our foul smells *are* and *always have been* turned out into the open air. Now, is it any worse to turn them loose in the wind at the top of a chimney *forty feet high*, than to turn them loose on a level with the ground? I have not yet been up to the top of our tall chimney to find out what kind of smells are pouring forth; but in any event I would much rather they would pour forth up there than anywhere else. In one of the basements of our establishment we have a kitchen where they cook dinner for the workmen—both men and women; and we have always been annoyed more or less by certain savory and unsavory odors from the kitchen coming up through into our office and other rooms. It has sometimes seemed as if this always happened when distinguished visitors happened to be looking over our premises. Well, since this great big chimney has been doing duty, our cook can have onions, doughnuts, or whatever she chooses, for dinner, and no one's nose informs him of the fact before he sits down to the table.

What has all this long story to do with gardening, do you ask? Why, simply this: The residue that has heretofore been such a terrible load to carry out on our fields, and plow under

(*without a moment being lost*), is now simply a dry fertilizer like guano or dry poultry manure. It may be taken in the hands, or pounded up to be evenly worked into our plant-beds, just as we put in bonedust or phosphate; and the Smead folks say it is worth just as much in the latter form as it was in the former. I wish Prof. Cook and friend Terry would tell us what they think about this last idea.

OUR QUESTION-BOX,

With Replies from our best Authorities on Bees.

QUESTION 174. *What evidence have you had that bees are more likely to supersede a queen that is clipped?*

None.
Wisconsin. S. W. S. I. FREEBORN.

None whatever.
Illinois. N. C. J. A. GREEN.

Not any. I don't think they are.
New York. C. G. M. DOOLITTLE.

Not much when only a part of one wing is clipped.
New York. C. P. H. ELWOOD.

There is no evidence, and I do not believe that that tendency exists.
Ohio. S. W. C. F. MUTH.

Not any. I have not the least idea that it is true with me, at least.
Michigan. C. A. J. COOK.

We used to clip the wings of queens long ago, and have never noticed that they were superseded on that account.
Illinois. N. W. DADANT & SON.

I don't believe that a queen will be superseded any quicker on account of having her wing clipped. We clip all of ours.
Wisconsin. S. W. E. FRANCE.

We have not practiced clipping; but bees have always evinced a disposition to supersede a queen crippled in any way.
Illinois. N. W. C. MRS. L. HARRISON.

The evidence that bees are not satisfied with imperfect, or maimed or crippled queens, as every observing bee-keeper knows.
Ohio. N. W. H. R. BOARDMAN.

I have practiced clipping my queens for the past eighteen years, and I rarely have one superseded. I think there is no foundation for the belief that clipping causes superseding, providing the apiarist is on hand to take care of the clipped queens when they swarm.
Vermont. N. W. A. E. MANUM.

I can't say positively; but, not having kept a record, it *seems* to me that there is more likelihood of being superseded when clipped; *but* I have had but little superseding done to clipped ones; for, unless extra good, I keep none over two years, and they are seldom superseded at that age.
Ohio. N. W. A. B. MASON.

I have no evidence to that effect. I do not practice clipping queens' wings, though I have done so in times past. When I did clip I was sure they lived to a good old age, and died full of honors.
New York. E. RAMBLER.

I have clipped my own wings from answering this question by not tolerating the practice. But, without much doubt, bees are guided mainly by smell in the matter of superseding queens. A good queen keeps the hive faintly suffused with the smell of fertility; and while this is the case they do not care how many legs and wings she chooses to wear, and would probably ask no questions if she got along without a head.
Ohio. N. W. E. E. HASTY.

The best in the world. When about half of one of my apiaries has clipped queens and the other half not clipped, their blood and age being the same, I found the most and earliest supersedures where the queens were clipped; and the tendency for swarms to reswarm was something like ten times greater where the queens' wings were clipped.
Michigan. S. W. JAMES HEDDON.

My two years' experience in clipping all my queens does not afford evidence of their being more readily superseded on account of being cropped. I once had an imported queen that had one wing off, one rear leg off, and foot off the second leg on the same side. I do not know how old she was when I got her, but she continued to lay to the fourth year as well as any queen I had.
California. S. R. WILKIN.

Nothing, except what I have read. I really don't believe it makes any difference. A good many years ago I saw in one of Mr. Root's colonies a queen with no vestige of a wing, looking like a big ant, and yet I think she had the entire confidence of the whole community. If supersedure comes from partial loss of wings, this total loss ought to have hastened matters. Did it, friend Root?
Illinois. N. C. C. MILLER.

Perhaps our good friends Boardman and Heddon, after seeing the array of heavy testimony to the effect that clipping makes no difference, may modify their decision, unless, indeed, they are of a class that never take any thing back, no matter how much proof is offered—which I am sure they are not. I have at times thought the bees seemed more disposed to supersede a queen with her wings clipped; but with these good friends of mine against me, I am quite ready to give up. I do not like to see them clipped myself, however; and a good many times something turns up to make me wish that a certain queen had wings. On this account I have recommended that they be not clipped any more in our own apiaries. I well remember the old queen that looked like a big ant, friend Miller, and I think we had her for at least three seasons, and she certainly did as well as any queen in the apiary.

HEADS OF GRAIN

FROM DIFFERENT FIELDS.

AIR-SPACE VS. PACKING: DOUBLE-WALLED
HIVES.

Permit me to ask the following question: Are double-walled hives with air-spaces unpacked, as effectual in retaining the heat generated by the bees as they would be with those spaces packed? and would they be cooler, in summer,

unpackd, than otherwise? I should like the replies of best authorities on bees through GLEANINGS.
E. W. SMITH.

West Canaan, O., Nov. 27.

That is just what we want to know, friend S. The question was submitted in the Question-Box department, and a majority of the respondents voted in favor of packing as against air-space. The probabilities are, that any kind of packing between the two walls of a hive is better than none. However, for several years in our apiary one of our chaff hives which we supposed had been packed was found to have never had any chaff at all, when we came to renovate it of foul brood by boiling. This one hive occupied a conspicuous place in our apiary; and although it had only a dead-air space, it wintered just as well as the packed hives, so far as we could see, for a period of seven or eight years. How much longer it would have continued to do so I can not tell. In a moderate winter climate like ours, I am of the opinion that the air-space will do just as well; but in colder climates, no doubt packing is an additional protection. The W. T. Falconer Co., of Jamestown, N. Y., have for years sold what they call their Chautauqua hive. This, I believe, has no packing between the side walls. It is practically a hive with a dead-air space. We have had reports of comparative tests between this and our regular chaff hive, in which the bees seemed to winter about as well in one as in the other. Just now I do not recollect the exact latitude from which these reports were made. If any of our readers who are located in cold climates have had opportunities for making such tests, I should be glad to have them report. Henry Alley, in a recent article, said that the air-space did as well as packing in his locality, and we have had many reports to the same effect. This matter is of peculiar importance just now, on account of the discussion going on in regard to an outside protecting shell for winter; for if such a case, without packing, in most localities, will winter successfully, it will be a great saving in the cost of hives in outdoor wintering. Do not understand that I say this *can* be done. I am only awaiting the results of experimental tests by ourselves and others.
E. R.

DOES COMB HONEY EVER TURN YELLOW?

We notice the comb honey we received from you in October is turning yellow, which makes it unsalable. Please advise us what to do.
Massillon, O., Nov. 29. DIEHLHENN BROS.

I have never heard of such a thing before. Is it not possible that you are mistaken? We have the same honey in stock, and ours has not changed a particle. I have heard of setting yellow comb honey in the sun in a window, and that the sun would bleach it so as to make it whiter. The honey you had was some of Mr. W. K. Ball's, which we have regarded as so very fine. Some of his comb honey had yellow cappings, and some white. To make it fair,

the sections were mixed together, the quality of the honey in either case being the same. It is quite possible that you first removed the sections of white capped honey by accident, and, later, pulled out some with darker cappings. In any event, the white capping should not turn yellow in so short a time out of the hive.

WHAT IS A "HONEY-QUEEN"?

I should like to know what is meant by a honey-queen, as I have noticed advertisements in GLEANINGS where they have stated that they have such for sale. C. A. DICKMANN.

Gehm, Mo., Nov. 24.

What we mean by honey-queens is queens whose progeny rather excel in honey-gathering qualities, their color and that of the bees being secondary, although showing at least three yellow bands. Honey-queens that are sold are raised from some queen whose progeny has excelled the others in the apiary for real work. It is possible that the bees of such queens may not duplicate those of their mother; but as they are bred from that sort of stock the chances are pretty good.

THE COLUMBIAN FAIR.

We take pleasure in copying the following from the pen of Dr. A. B. Mason, as it appeared in the *American Bee Journal* for Nov. 29:

Friend Newman:—I sent a portion of my address, read at Keokuk, to the Director-General of the World's Columbian Fair, and a part of the reply, received yesterday, reads as follows:

In response, I have the honor to say, that at the present time it is not possible to give you definite information as to the plan of organization of such a department, further than to say, that the bee-culture industry will be amply provided for in the classification of exhibits. Your letter will be filed for consideration at an early date when this subject is acted upon. I remain yours very truly.

GEO. R. DAVIS, *Director-General*.

I should like to suggest that the President or Secretary of each State Bee-Keepers' Association let me know, at once, about the amount of space the bee-keepers of their State will be likely to want at the Columbian Fair.

I expect to ask for about 3000 square feet of space for Ohio; and if the other States that should exhibit will do so in proportion, we shall need from 100,000 to 150,000 feet of space, and will "astonish the natives" with the magnitude of the display.

In a "P. S.," Gen. Davis says: "We will soon send you classification and application for space," so it will be seen there is no time to lose.

Let each State society at its next meeting choose a committee to have charge of getting up the State exhibit, and the securing of an appropriation by their next Legislature to defray expenses, for it will take money to make a creditable display.

If any should write me for any information they will do me a favor if they will inclose one or more stamps for a reply; and then be sure to sign their name to their letter. Yours truly,

A. B. MASON.

INCENDIARIES IN THE HANDS OF THE LAW.

Mr. Root:—I am glad to inform you that I have succeeded in arresting the boy who set fire to our shops last spring. There were two of them. One is now at the State Industrial School at Waukesha. He made a full confes-

sion; and as soon as the other boy was arrested he also confessed, telling the same story as the boy at Waukesha. They say they simply wanted to see a great fire. One is eleven years of age, and the other thirteen. I am very glad to know how the fire started, and to know it was not done through any enmity.

Watertown, Wis., Dec. 4. G. B. LEWIS & Co.

We are very glad indeed, friends, to know that you have got hold of the culprits; yet it seems a sad, sad thing to find that boys only eleven and thirteen years old are abroad in our land who can be guilty of such a terrible crime. Surely these boys have been neglected. My first thought was, "Were they in the Sunday-school and in the day-school?" Do they have laws in Wisconsin compelling people of that age to get an education whether they will or not? We, too, rejoice to know that it was not through any jealousy or envy at your success as business men.

THE DOVETAILED HIVE EASY TO SET UP.

The Dovetailed hives, etc., have been received in good order. I think I shall like them better than the Simplificities, because they are lighter, cheaper, and easier to set up.

BISULPHIDE OF CARBON FOR ANTS.

I notice in Nov. 1 GLEANINGS that Mr. W. F. Elliott, of Clio, Tex., desires a remedy for red ants. Let him try the bisulphide of carbon, so often mentioned by Prof. Cook. Directions: Pour about a pint into the hole; cover for about a minute, then explode the vapor that has formed, by burning a rag tied to a stick, and close up the hole air-tight. They call it ant-poison here. It is excellent for killing night, or cutting ants.

JAPANESE BUCKWHEAT.

In spring I sowed 5 lbs. of Japanese buckwheat on about $\frac{1}{4}$ acre of rich land, from which I harvested 3 bushels. September 12th nearly a peck was sown on the same ground, which yielded almost four bushels. The bees worked on it in great numbers in the morning.

Yorktown, Tex., Nov. 29. R. WESTPHAL.

WARRANTED QUEENS.

1. If a queen-breeder guarantees or warrants untested queens purely mated, and some of his queens sent out should show two and three yellow bands (no black bees at all), would such queens be called mismated? 2. Should such queens be replaced, under above conditions?

High Hill, Mo., Nov. 3.

J. N. S.

Yes, to both questions, most assuredly. Unless a queen produces all three-banded bees, she is mismated. See our ABC book.

STRAWBERRY-GROWING IN FLORIDA.

Friend Root:—I would say, in reply to your comments on my letter in the Nov. 1st GLEANINGS, that the berries bear only one season, and are then turned under, and young plants set again. The long bearing season exhausts the old plants so that they are of no value for another crop. I have never had berries for Thanksgiving or Christmas, but for New Years day we have had them. We have Jessie, Burbach, Indiana, and Nunan—the latter the main variety planted in Florida—all growing finely; and to-day we are having a steady rain that

will make it a Thanksgiving day for all vegetation as well as human kind, as we have had none for a month.
H. G. BURNETT.

A va. Fla., Nov. 27.

STRAY STRAWS.

EDITED BY DR. C. C. MILLER.

Mice make mischief many times in the cellar. If they would only eat what honey they want it wouldn't be so bad; but they destroy so much brood comb. Latterly I keep them out of the hives by covering the entrance with wire cloth, three meshes to the inch. It keeps the mice out without shutting in the bees. I like it.

REVERSIBLE BOTTOM-BOARDS.

After a trial of more than a year these prove quite satisfactory to me. They were less troublesome to reverse this fall than last, because the hives were not out of square. I'm sure that a two-inch space under the bottom-bars is a good thing.

CHAPMAN HONEY-PLANT SEED.

This is yielded in good quantity, and is said to contain much oil. I picked some heads and threw to the chickens. They wouldn't touch it. Then I picked out some seed looking like grains of rye. They ate these readily, and some of them then began to eat the seed with the hulls on. Could this seed be profitably raised for chickens?

B. Taylor, Forestville, Minn., has the laugh on me. The little sticks between sections that I paraded as my own "git up" were shown to me by him in Madison last winter. My "forgetter" was in good working order.

Hon. R. L. Taylor is an exasperating customer. In his President's Address he spoke of the "fact" that honey "may be kept in perfect condition from one year to another," but didn't tell how. I wrote, challenging him to tell. Back comes a postal, saying, "I have kept honey over in perfect condition, and it sold without question at the same price as new honey, and it was really decidedly better," and a few words of sauce, but not a word about the "how." If comb honey is meant, I have known of only two or three cases of keeping over in good shape, and that on a very limited scale. Whether he has a different or the same plan, it is important to know about it, and Bro. Taylor is not the sort of man to make a statement without solid foundation. Let's make him tell or put him out.

The papers now have an imitation of comb so natural that the bees themselves are deceived by it, and *eat it* in winter. Next!

Years ago a bee-keepers' department in an agricultural paper was a rare thing. Now it is common. The busy bee has buzzed itself into notice.

INTRODUCING QUEENS.

Joshua Bull, in the *Apt.*, says that for years he has had complete success in introducing queens, provided there was a virgin queen in the colony to be operated on. All that is necessary is to remove the virgin, "and immediately let the laying queen loose upon the comb right among the bees."

Got caught, didn't you? The weather stayed pleasant so long, that, when the cold snap came on the first of December, there were things still undone that you expected to do before the freeze-up. Weather always does that way. Look out next time.

Temperature in the cellar is important. The general agreement seems to be that 45 degrees

is about right; but don't you depend entirely on that. Cellars differ. Thermometers differ. Hives differ. Take 45 for a starting-point, and then find whether your bees are any quieter above or below that.

I believe my bees are better off above 45 rather than below, in the cellar.

Editor Alley is a law unto himself in a good many things. He's generally emphatic in whatever he does. He is very emphatic in the December number in mixing up the editorial "we" with the common, every-day "I," changing from the one to the other with a recklessness very refreshing, ending up with "I regret we." All right, friend Alley. The "we" business is becoming antiquated.

Don't you wish GLEANINGS would come once a week, especially in the winter? Well, the next best thing, if you do not already take them, is to take another of the bee-papers. There are several that I shouldn't like to be without.

Have you ordered all the supplies you need for next year? You'd better. If you wait till about the time you need them, you may be delayed, and now you may get a discount on them.

Last summer when work was crowding, you and I had hardly time to read the bee-journals, and sometimes could take time only to glance through them. Wouldn't it be a good plan to read them all over this winter?

Some editors think they know every thing. They don't. Most of them don't think so. They are always glad to get suggestions from their readers. I am reminded of this by friend Root's request that patrons offer suggestions to make his catalogue more helpful and convenient. So it will be a good plan, if you think of any thing that would improve a bee-paper, to write the editor about it. But don't get mad if your suggestion is not followed. In nine cases out of ten there are good reasons why it should not be.

Think of comb honey being "wanted" in San Francisco at 13 to 14 cents a pound. But it seems to me it hardly goes up in proportion at the North.

Will honey drop in price about the first of January? Usually it does. But one year, when it was hardly as scarce as now, it kept going up till late in spring.

I am reported as saying at Keokuk, that the large black ant will not honey-comb bottom-boards if they are kept off the ground. I don't know whether I said just that, but I know I didn't mean it. I am not sure that they will trouble if the bottom-board stands directly on the ground. The worst trouble seems to be where the bottom-board stands flat on another board. The ants seem to commence work between the boards. I think they will not trouble if nothing touches the under side of the bottom-board only around the edges.

The Honey Column in GLEANINGS is good, all but where some one says, "Prices remain unchanged." It isn't pleasant to be obliged to look back one or more numbers to see what the price is.

I wish I could get my bees trained like Manum's to put off the brace-comb business till fall. Mine seem to be just as bad early.

Oh, but ex-president Taylor will feel conceited when he sees his picture in the report of the Keokuk convention!

"Volunteer Contributions" appears in two programmes that I have seen. That may be all very well for a little while; but some of these days somebody will wish that "Volunteer Contributions" had never been born.

Jones protests against the last part of foul-brood treatment given in Mr. Pringle's Keokuk essay. He says it isn't safe.

MYSELF AND MY NEIGHBORS.

Not by might nor by power, but by my Spirit, saith the Lord of hosts.—ZECH. 6: 4.

Dear friends, this is my closing talk for the year 1890. The question has been on my mind for some days, "What shall be the last thought of the year? What subject is of most moment and most importance just now, to the readers of GLEANINGS?" A very kind letter from a friend who furnishes me some valuable facts in regard to artesian wells, furnishes me my subject in these closing remarks. It is as follows:

Friend Root:—I was surprised at your reasons for giving money to a railroad company. What does the Scripture mean when it says, "He that giveth to the rich shall surely come to want"? If the railroads of this country are not rich, then I don't know as much as I thought I did. One can walk cheaper than to ride on a railroad. To make a long story short, they are robbers. I have often wondered what kind of people the Nazarene was speaking to when he said, "My Father's house shall be called a house of prayer; but you have made it a den of thieves." I trouble you with this, because you are one of a few that desire to do what you can. We here in South Dakota can see that capital and labor will clash unless the difficulty is settled by ballots. There is a party here, six months old, called Independents, who will always be "Independents," in my opinion.
De Smet, S. D., Nov. 18. S. L. R.

Had the above come from only *one* correspondent, I should not have thought much about it; but I see the same spirit in other letters, and here, too, among my *neighbors* in Medina. I find it in the papers that are scattered so freely throughout our land. Perhaps the railroads are not very often so strongly condemned as in the above, but yet there is more or less of that sort of feeling prevailing. Our friend is evidently looking toward legislation and the ballot to right his wrongs. Well, there may be something for American people to do in that line; but it is so much out of my department that I will not even try to touch upon it to-day. The great thought that comes to me, and lies heavily upon my heart, is, that Satan is constantly entrapping us by persuading us that our neighbors are *all* evil; and especially has this thought got into the heart of the *laboring classes* toward those who wield the *capital* of our land. Dear friends, I am sure that capital and labor should go hand in hand, just as a husband and wife should go hand in hand. I am sure that God has intended that capital and labor should be *wedded* together. Their relations should be kind and loving ones. Each should seek to assist and aid the other—or, as is said in one text, "In honor preferring one another." The husband should make it his constant study to assist and help and please his wife; and she in turn should make it her constant thought to minister to his comfort, each one setting aside self for the good of the other. Now, when capital and labor can be doing just this, then shall we have a millenium here on earth. But doubtless many of our readers will say, "Capital has not done this, and does not propose to do it. Capital is the *stronger* party, and labor the weaker one. Labor always has submitted—at least almost always—and you would recommend, Bro. Root, that labor *still* submit." No, I do not. I know capital has a seeming advantage; and I know, too, that capital has been, in some cases, very lofty, overbearing, and unfeeling. In the very same way, many husbands, by their superior strength, and perhaps greater knowledge of the world, and possibly greater mental force, have the advantage, and in a brutish, selfish way, propose to keep it. Both pictures are sad ones. Where is the remedy? I should say, dear friends, before

we try legislation or the ballot—that is, before we rely entirely upon these agencies—we should look into our own hearts and see that *they* be right: be sure they are in fighting trim. You know what I mean by "fighting trim." The fighting to be done is in the line of the text I have chosen at the head of this talk—"Not by might nor by power, but by my Spirit, saith the Lord of hosts."

Let us take our friend's letter in order. First, he expresses surprise that I should give *money* to the *railroads*. Why, dear friend R., it is these same railroads that are revolutionizing the earth. Without the railroads *you* could not *live* where you are now. Without them we should be in barbarism, as other nations are now, and where they must stay until railroads can let the light of civilization shine in upon them. It is the railroads that enable us to live in places where famine and starvation would be constantly recurring without them. See the examples in the Old World. For want of railroads the inhabitants of China, in certain districts, are starving to death by the *million*. A former pastor of our church is now in China. He told us of a railroad that was built in China some years ago. The Chinese let the same bitter spirit enter their hearts that now and then comes into the hearts of our people here at home, and they tore the railroad all up—demolished the locomotive, tore up the track, bent the rails, and then—well, what then? Why, they *starved to death* during poor seasons, just as they have been doing for centuries past! Dear brother, you do not give the whole of that beautiful text from Proverbs, about giving to the rich. The whole verse reads, "He that oppresseth the poor to increase his riches, and he that giveth to the rich, shall surely come to want."

You will notice the starting thought—in fact, the leading thought in the verse is, "He that oppresseth the poor to increase his riches." Then follows the other part of the figure in regard to him that should favor the rich. That is, if a man wanted some work done, and instead of letting a *poor* man do it he should give the job to a *rich* man, such a one shall surely come to want. Is not my construction right? You think that I gave to the *rich* in giving to the railroad. Why, dear brother, it is my own friends and neighbors who are building that railroad. The prime mover in the whole project is a little energetic, wiry man who lives in a neighboring town. He has been working for an east and west railroad for all of five or six years. He got it started and under headway some years ago; but one disaster after another snowed him under, and we supposed he was hopelessly ruined. He kept at the work, however, winter and summer. Just before we got the road under way I laughingly told him that, if *anybody* deserved a railroad, he did, in answer to his indefatigable industry and perseverance. He told me confidentially that, if it failed *again*, he would be hopelessly ruined, and we, *too*, would have our chance of getting an east and west railroad, as an outlet for our increasing business, for ever lost. At one of our railroad meetings it seemed as if the project must be given up. The people began to lose heart, and go home. Then I stepped in and gave them an exhortation, and made some rash promises, as some of my friends thought—something like matching every subscription that would be made during the remainder of the evening. They rallied, and came back; and we got so near the desired goal that night that the railroad took a fresh start and went ahead. Railroads and printing-presses, dear brother, follow in the wake of missionaries, as you well know. It is true, many vicious and profane

men are engaged in building and managing railroads; but for all that, they carry the gospel of Christ Jesus everywhere they go.

You declare that the railroads are rich. Are the railroads of our country *all* rich? Why, dear brother, they must have *capital*, or they could not exist. But look about you, and see how many of them fail to pay expenses, and go into the hands of a receiver. Such a thing has happened twice to the only railroad that has been in our town for the last nineteen years, and yet you call them "robbers," and others say these companies have *no souls*. To whom do these expressions refer? They must surely refer to somebody. Is it the engineer, the conductor, those who handle the freight, or is it the president of the road and the stockholders? I am somewhat acquainted with these individuals on our road. Some of them are professing Christians, and good men; others are not, just as in all other avenues of life. We are seeking, however, to bring them to Christ Jesus. Shall we do it by calling them robbers? In another column, Dr. Miller has alluded to the stubbornness of the railroad officials in regard to giving us reduced rates to the convention. I have in my possession two very kind, gentlemanly letters from railroad officials explaining why they could not give us reduced rates. They have learned by past experience that the attendance is *too small*. We all know that the attendance at our national conventions is not what it should be. In asking them to give us reduced rates it is something like having a neighbor want you to come in from the field to weigh him up *half a pound of honey*. If you have ever had to do that very much, you have learned that you can not stand it, especially when time is valuable. If you call a neighbor a robber, and tell him he has no soul, you are taking the very *shortest cut* to make him a robber and a soulless knave. By such treatment you may make him so ugly that he loses his ordinary good sense and sense of justice. What does our text say?

Do you really think that Jesus had in mind our railroad men when he spoke about making the house of prayer a den of thieves? It was on only one occasion that he used such words as these. The traffickers had invaded the house of God, and used it as a place to drive their sharp bargains. On such an occasion our Savior took upon himself the responsibility of reproving them and turning them out. When our railroad men go into God's house, they are surely as well behaved as other people; and when it comes to the contribution-box, they usually give liberally of their possessions. Many a church is indebted to some railroad man for its foundation, and may be something more. In California the railroad companies are so firmly convinced that the house of God is a symbol of prosperity that they build beautiful churches outright; nay, more. Whencit comes Sabbath-day they are on hand with their families, and they set a good example to many of the inhabitants of a *farmin'* community. It is true, when asked if they were members of the church, many of them would say, "Oh! my wife belongs. She sings, and reads the Bible while I listen to the sermon and help pay the running expenses." My friend, the latter is not *all* we could desire, but it is enough for us to be thankful for. Let us pray and work in the spirit of our text, and we have God's promise that the rest shall come.

Friend Terry is at present staying at our home. We are having a two-days' farmers' institute. Yesterday he told us in his talk of a place in the western part of Ohio where butter is selling at 10 cts. a pound. He examined some that a farmer brought into the store, and

he said it was every bit as good butter as he pays 25 cts. a pound for in Hudson, O. In fact, he gave \$25.00 for 100 lbs. of such butter. He ate the butter at the hotel tables, and the landlord assured him that he paid only 10 cts. a pound for it. Now, what does this mean? Bee-keepers have complained of such a state of affairs in regard to honey; but so staple an article as *butter*, and butter of fine quality—why, I was astonished. How does it come? This way: There are no railroads there to equalize prices. Perhaps the people have not enterprise enough to demand one, and to go to work and build it as we did. Another thing, the producers are small farmers, with a few cows apiece. The amount of butter they make is so trifling that they do not inquire into it. They do not read the quotations in the city papers. Very likely these men who sell their butter for 10 cts. a pound sit around the stove in a country store, and call capitalists soulless robbers. What shall they do? Why, bless your hearts, dear brothers and sisters, they should make a little "trust company" of their own, if you will excuse the expression. Yes, call it a "ring"—they need a ring to defend themselves, and they need to work in a brotherly band. If a ring means a brotherly band, then I am in for rings. This little brotherly band of farmers should pack their butter all together, each man putting his name on his package, and send it to some commission house in the nearest large city. Think of the difference—10 cts. and 25 cts., for a staple article like butter! Now, nothing but railroads can cure this state of affairs—railroads and the right sort of spirit between the small farmer and the railroad officials. You and your neighbor need not be at swords' points because you are a day laborer living in a little rented house while he lives in a fine mansion. Your relations may be of the most friendly nature imaginable. He may help you, and you may help him.

If any one will take an unbiased glimpse of the great industries in progress at the present day, I think he must admit that the only possible way to accomplish many things is by combined capital, and by forming great companies. You may call them "trusts" and "rings" and "monopolies," if you choose; but they are really a necessity of the present age. In our talk at the institute I have mentioned, the Hon. Thomas B. Palmer gave us a history of the attempts that have been made, not only in Ohio, but in other States, to improve our country roads. That we might do this intelligently, many good public-spirited citizens labored hard to change the existing state of affairs, and even laws were passed in some sections to have the road-tax paid in *money* instead of *day's work*. This money was to be used by competent engineers and mechanics in making *permanent* roadways. Many of you know that the labor and money expended in working on the road, especially in clay soils, does no *permanent* good. In front of our residence and factory, the travel last winter crowded the clay all out of the roads, and almost up on to the sidewalks, until the center of the road became a filthy, reeking pool of mud. After long delay in the spring until it dried off, our road-makers scraped the clay up in the center again, and rounded it up nicely, and during the summer we had a very fair clay road; but during the two rainy months of October and November, the travel pushed the clay out into the ditches again, and the road is now about as bad as before. All the labor of packing it up amounted to nothing except a temporary gain, lasting a few months. Now, this kind of work has been going on for *thirty or forty years* in many districts. Enough labor and capital have been expended to have

made a macadamized or stone road that would last for years. This matter was presented again and again to the farmers, but they united almost in a body and rejected it. They wanted to stick to the old way of each one working his road-tax, and they carried the day. *Public opinion* was so against the law and the law-makers, that it amounted to nothing, and the law was a dead letter. Are the farmers helpless? are they the *slaves* of capitalists and politicians? They certainly were not this time. In our town we have a beautiful stone road from the depot to the court-house; but we had to fight hard to get it, and it was *not* done by each man putting in a day's work. It was done by the town council. Said our honorable friend in his speech, "My good friends, how long it would have taken to build your stone road from the depot to the court-house had you depended on each man working out his share of it? Why, the *first* stone would have worn 'clean out' before the *last* one was laid!"

Now, this is true: and combination and capital is the only way to accomplish even a little enterprise like the one I have mentioned. The irrigation in California, that has transformed a desert into the most productive land that the world has ever known, is the result of combination and capital. So it is with the railroads, with our factories, electric lighting, our great steamboats, and almost every thing else. There is no other way. Are all these men who are engaged in these things, who wield the capital or who hold the offices with high salaries, *bad* men? By no means. The more I become acquainted with them, the more I feel ashamed of myself for having misjudged them in former years. I can well remember when I used to feel bitter toward our banks and our moneyed men because they would not lend me money without proper security. Why, they did me a *positive kindness* in making me submit to ordinary business rules and regulations. *Bankruptcy* and the *penitentiary* are oftentimes the result of letting somebody have money by mistaken kindness, when he ought *not* to have it.

We are tempted to criticise and find fault because we do not *understand* things. Some one of our neighbors is lucky enough to get a position where he gets a salary of two or three thousand dollars a year. The temptation is great for the less fortunate ones to say that he got it by wire-pulling or by fraud. Such may be the case sometimes, but I do not believe it happens very often. The chances are greatly that he has worked hard (or *studied* hard, if you choose) until he was fitted for the position and deserved it. I have been watching this thing carefully for years. At the present time, while hundreds are applying for something to do, we are sadly in need of a man or woman worth one or two thousand dollars a year. Now, none of you need apply because I say this. There are no such people on the market. *Others* besides *ourselves* are needing them. There are *good* people, mind you, *plenty* of them—people well educated, and with experience; people who are honest and true, and who will do their very level best, but not people who have worked hard, who are broad and deep enough to see what our nation wants, and who have the *ability* to direct a lot of men and women, or a large business. Such people do not grow themselves. They must be *made* to order, as it were; or, perhaps, better still, make *themselves* to order; and when they are made, *everybody* wants them. Some very good friends of mine have tried to fill these positions. They have been very confident and sanguine, and they have been true and Christianlike enough to admit, when they found the work was greater than they could manage, to say so, and step

down and out. Now, when one *has* the ability to fill these places, for Heaven's sake let us beware how we let envy and jealousy get into our hearts. Let us beware about speaking unkindly or spitefully of him.

Now, friend R., please believe me when I tell you that the men who manage our railroads successfully are the kind I have been describing. When they are opposed by laboring people who will not take the time to inform themselves in regard to these matters, they get in the habit of being short and perhaps overbearing in their answers, for they are by no means perfect in *all* the Christian graces. I do know this: That, when the managers of a railroad find out that a man is disposed to be fair and honest, and does not try to gouge and cheat them whenever an opportunity happens, they are very fair and liberal with him. It gives me pain when I hear the expression to the effect that railway corporations have no souls. It is true, it is not exactly like dealing with any *one* man. But this corporation is made up of a number of men—made up of our neighbors, and the fact that they feel hard and indignant, and many times bitter and ugly, when these things are flung at them, shows they recognize the insult is intended for them, and they often resent it, as you, my friend, would resent an insult. I do not mean to say there are no wrongs that should be righted; and this organization that our good friend calls the Independents may be the right and proper way, providing it works in the line of our text—"Not by might nor by power," but by the spirit of Christ Jesus, remembering that we are constantly dealing with our *neighbors*, and that kindness and brotherly love—perhaps I might say *neighborly* love—will accomplish what bitterness and spite can never do. Our farmers and laboring classes are by no means helpless. I have given you an illustration where they conquered, and had their own way, even where they were in the *wrong*, and the law-makers in the right. If our rural neighbors can carry the day when they are in *error*, who shall say what they may do when their cause is *right* and *just*? Perhaps some of you say, "Why, Bro. Root, how do you *know* we are in the wrong? If we want to make our roads as we have been doing for fifty years past, by scraping the clay up in the center, and letting it flat out again in the winter time, is it not our privilege?"

Well, this may be open to discussion; but I do not think it *is* your privilege. You are in duty bound before God and your fellow-men to consider the good of the people at large, and the good of the people who are coming after you. You have no business to waste valuable strength year after year in something that does no permanent good. You have no business to wear out your horses, and keep your wife and children at home when they might spin over good roads to come to town and attend farmers' institutes, to go to church and Sunday-school, etc., just because you are too lazy, or too little and stingy and mean, to employ competent men to make some *good substantial roads*, just as you would employ competent men to make good substantial houses and barns. I hope this latter clause is in the spirit of the text at the head of my talk to-day. If it is not, may God give me grace and wisdom to see my *own* want of charity.

You know how badly *we* have felt because the great outside world would have it that our honey was all manufactured, comb as well as extracted, and how reluctant our friends and neighbors were to let go of the silly falsehood. Well, now, I am sure that we on *our* side are doing something of the same kind when we accuse those who handle the large commodities of

life, of forming trusts and rings, and the like. Remember what a great stir was made about the trust on binding twine. Well, I took the pains to read up on the subject, and I became perfectly satisfied there was no trust at all, and *never had been!* The sudden demand for twine for binding grain brought about the very state of affairs that comes now and then in every product. Why not accuse the farmers of having made a trust on potatoes that makes them worth 35 cts. a peck to-day in Medina? Friend Terry has been at our house for two days, and I discussed the whole matter with him most thoroughly. He agrees with me exactly, and, furthermore, says that he believes that even the *Standard Oil Company* has been a blessing to the world at large. He says he believes we get better oil, and at a lower price, than we ever should have had it without them. Now, we may not all exactly agree with him; but yet his charitable feeling toward all these great industries keeps him constantly in a happy frame of mind. The first day of our institute he talked three times, and then again in the evening; and he is going over the whole State of Ohio this winter, doing almost the same kind of work every day. What he contributes to the agricultural papers is written between times. I fear his health will never stand such severe mental labor as he is doing; yet he is doing it out of love to our people, and because he hates to see our Ohio farmers waste *strength, energy, and intellect* in fighting the many things that are like bogus comb honey—things that *never had an existence* at all. I hardly need tell you that friend Terry stands alone by himself, so far as any *ring or combination* is concerned. He is in daily, constant intercourse, not only with the *farming* people, but with our great leading *capitalists*. He has ample opportunity, and no doubt many *invitations*, to use his great and increasing influence to favor different selfish projects; but may the Lord be praised for the fact that money can not buy him—no, money can not swerve him a *hair's breadth*. Can I say as much for you, and *you*, and *you*, my friend? If so, then I can say again, "May the Lord be praised." You are just what our country stands greatly in need of.

And now, dear friends, permit me to close my exhortation to you for this time with a little bit of that beautiful chapter in I. Corinthians, the 13th. If you should see how fitly it applies to the case in question, and feel a desire to read more of it, and should take down the family Bible and read the *whole* chapter to the good wife and children, I shall be happier still; and may Christ Jesus bless all these talks for the year past; may the influences of the Holy Spirit so bring them home to your hearts, that you can enter the year 1891 with a broader charity toward all the world, and especially toward our great corporations of which we have been speaking, than you have had before. May you not only have a broader charity, but may you have a happy and willing spirit, thanking God for the chances he has given you to make your way among the crowd; and may you have grace to get a glimpse of the kind and loving spirit that surely *does* exist *somewhere* in the heart of every neighbor round about you, whether he be rich or whether he be poor. Here is my extract:

Charity suffereth long, and is kind; charity envieth not; charity vaunteth not itself, is not puffed up, doth not behave itself unseemly, seeketh not her own, is not easily provoked, thinketh no evil; rejoiceth not in iniquity, but rejoiceth in the truth; beareth all things, believeth all things, hopeth all things, endureth all things.

EDITORIAL.

A soft answer turneth away wrath; but grievous words stir up anger.—Prov. 15:1.

SUGAR FROM BEETS VS. SUGAR FROM CANE.

PROF. COOK says there is no difference whatever. See his article on the subject, in our next issue.

THE SMEAD DRY-CLOSET SYSTEM, AND THE VALUE OF THE RESIDUE.

SINCE the close of the article on page 898, I have conversed with friend Terry and also with one of the Smead people. Mr. Terry says he would consider the dry residue of just as much value as to carry it on the ground with so large a quantity of water. The Smead folks tell me the customary way of disposing of the product is to pour on a little coal oil and set it on fire. It will all burn to ashes, without any residue, and it may be burned up once in three months, once in a year, or once in two years, as the owner chooses. The vault of the closet is built of brick and iron bars, so that there is nothing to be endangered while the burning is going on. The smoke and gases go so promptly up the shaft that nobody will know that the contents are burning.

LIFE-MEMBERSHIP IN THE N. A. B. K. A.

NEW life-members are being continually added to the roll, and so far we feel very much encouraged; and if this membership is to continue at the present rate, we shall keep on harping until the list is swelled to a respectable size. Up to the date of the meeting at Keokuk, these two were the only life-members: D. A. Jones, Beeton, Ont.; Thomas G. Newman, Chicago, Ill. The following is the list of names that have been handed in since, in the order of their receipt: A. I. Root, Medina, O.; E. R. Root, Medina, O.; J. T. Calvert, Medina, O.; Charles Dadant, Hamilton, Ill.; C. P. Dadant, Hamilton, Ill.; Eugene Secor, Forest City, Iowa; Dr. C. C. Miller, Marengo, Ill.; O. R. Coe, Windham, N. Y. We trust that every bee-keeper who is interested in the highest welfare of his pursuit will at once send his name to the secretary, Mr. C. P. Dadant, Hamilton, Ill. If you are unable to pay the amount now he will charge the same to you, and you will then be enrolled in the list as above. The above makes ten names, and all that has been paid in is invested and drawing 6 per cent interest.

REPORT OF THE N. A. B. K. A.

THE 21st Annual Report of the North American Bee-keepers' Association has just come to hand from the publishers, Messrs. T. G. Newman & Son, Chicago, Ill. As usual it is well and neatly printed, and substantially bound in a tinted-paper cover. One thing we notice in particular in regard to this report is, that it is nearly twice as large as any other report of one

convention. The Keokuk report occupies 50 pages, the size of this; the one at Columbus, 26 pages; the one at Brantford, a year ago, 28 pages. Every member will have a copy of the last report, and a good many who are not members should have it. Price 25 cents each, or to members free. Apply to Thos. G. Newman & Son, as above.

BEE-KEEPERS' ADVERTISER.

THE above is the caption of a circular and pamphlet of instruction issued by Henry Alley. In regard to the bee-keepers of York State and the closed-end frames which they use so rapidly and easily, as mentioned by the writer in his recent visit, Henry Alley says: "There, friends, I told you these same things a good many years ago, and not only pointed out to you the advantages of the closed-end-frame hive, but offered for sale one of the best hives now in use. Now that this subject is opened up anew, I have no doubt that thousands of bee-keepers will adopt closed-end frames." The circular can be obtained free of Mr. H. Alley, Wenham, Mass.

COMMON SALT AS A REMEDY FOR FOUL BROOD.

ONE of the bee-friends takes us to task for dismissing the above rather too briefly—see page 822. Our reasons for so doing were these: During the whole time that foul brood prevailed in our apiary, we used salt in front of the hives for keeping down weeds. Whenever there was a rain or even a heavy dew, the bees could be seen in the sawdust around the entrances, helping themselves to salt water to their hearts' content. Secondly, Prof. Cook or some one else has reported testing the matter, with scientific exactness, and the salt water had no effect whatever on the foul brood. We are quite willing, however, to reconsider the matter when any thing positive can be brought forward.

KIND WORDS FROM OUR CUSTOMERS.

THE PAPER-WRIGHT.

I can hold it in my right hand and scratch enough geometry in my head with my left to last two weeks. It is very pretty. WALTER S. POUDER.
Indianapolis, Ind., Oct. 2.

THE NEW DOVETAILED HIVE.

In the new Dovetailed hive, with Hoffman frames, described in Nov. 1 GLEANINGS, you have given the fraternity, I think, a perfect hive, and one which is destined to become immensely popular. JAS. ERWIN.
Lexington, Ky., Oct. 31.

The honey I ordered came to Newburgh yesterday morning. I find it just as you described, almost as white as water, and of very thick flavor. I am well pleased. Freight was 50 cts. I presume it would have been no more on twice the amount. E. HANCHETT.
Cleveland, O., Oct. 29.

OUR 15-DOLLAR SEWING-MACHINE AS GOOD AS ONE COSTING THIRTY.

I received your sewing-machine in good order, and I am well pleased with it. I could not have got it any less than \$30.00 around this part of the country, and it sews just as well as the \$30.00 ones. It sews any kind of cloth. MRS. JEAN BONNAT.
Coulterville, Ill., Nov. 10.

HONEY ALL SOLD—AN ADVERTISEMENT THAT PAID.

Please stop my advertisement in the Honey Column. My honey is all sold. Printer's ink paid me this time. C. H. STOROCK.

Durand, Ill., Oct. 16.

THE KIND OF ADVERTISING THAT PAYS.

We don't mind to pay for the ad't, but it brings too many orders and too much correspondence. We hope this will reach you so the ad't will not appear again this season. We have sold some 800 queens this year, and would like to stop, as we want to keep a few for next year. We had to fill an order for 10 to-day. We know it pays to advertise in GLEANINGS and in the *American Bee Journal*. JNO. NEBEL & SON.
High Hill, Mo., Oct. 20.

KIND WORDS FOR OUR STRAWBERRY-BOOK.

I received the book on strawberries, by T. B. Terry, and I tell you I was agreeably surprised. I have learned more from his book than I ever heard of, and it is so easy that any boy can make a success from it. I want Mr. Terry's A B C of Potato Culture, and Care of Horses and Cattle. JNO. W. HENRIE.
Excelsior Springs, Mo., Oct. 15.

Strawberry Culture.—A forty-cent book on this subject, intended especially for beginners in the art, has been prepared by two good authorities, T. B. Terry and A. I. Root, and is published by the latter, at Medina, O. A number of good illustrations enhance greatly its value.

[We regard the above as a pretty good commendation, especially as it comes from the *Country Gentleman*, a paper so careful in what it recommends.]

The thousands of farmers who ought to grow strawberries for their own table may learn how easily it can be done by reading "The A B C of Strawberry Culture," a little book written by T. B. Terry, and published by A. I. Root, Medina, O. Mr. Root, who is a successful berry-grower, adds an interesting chapter. Both writers give their own experience, and state particulars that are usually omitted in books of the kind.—*Farm Journal*.

This is an admirable treatise on strawberry-growing, written in the usual practical and interesting style of Mr. Terry. It is a book evoked out of his own experience, and for that reason it is doubly valuable. We find much instruction from its perusal; the observations and experience of such men as the author are always apt to lead to improvement, and many hints and suggestions may be found in this little book that will prove of much profit to the strawberry-grower. Mr. Root adds a chapter on Strawberry Culture, and there are some good illustrations from photographs throughout the book. We heartily recommend it.—*Orchard and Garden*.

I have the pleasure of acknowledging the receipt of Terry's and your strawberry-book, for which I am thankful. For fifty years I have been getting about all the works published on this subject; and I can say that I consider yours the best. It leaves nothing untold in the way of how to treat plants and the berries, besides being a very interesting and readable little book. To-day I start to attend the State Horticultural meeting, and in the discussion on the strawberry I shall recommend your work. The new suggestions and plans in your book are valuable, some of which I have practiced; but I was not aware of others' doing it. S. MILLER.
Bluffton, Mo., Dec. 1.

FROM W. J. GREEN, OF THE OHIO EXPERIMENT STATION.

I have been much pleased in looking over Mr. Terry's strawberry-book, not only with what is said, but with the manner of presentation as well. It is both instructive and entertaining, and all the more valuable because of the better element. It is so full of enthusiasm that it ought to enthrall others. There is need of a book of this kind, for most farmers either believe that they can not grow berries or it would not pay them to do so if they could. This book helps those who would help themselves, and convinces those who are open to conviction. W. J. GREEN.
Columbus, O., Nov. 18.

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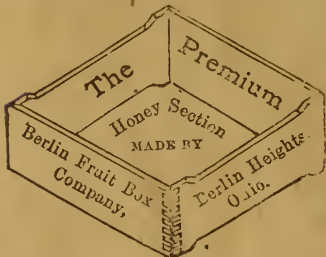
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